The Effect of Blended Learning-Based Teaching Methods on Teaching Vocabulary to EFL Students

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Abstract

The study sought to demonstrate the effectiveness of blended learning-based instruction in teaching vocabulary to English as a foreign language student. The study used an experimental approach, and the research community included all intermediate-level English language students at Mu'tah University. The study sample consisted of 50 male and female students divided evenly into two experimental and control groups. A vocabulary test was developed, and the study's findings revealed a statistically significant difference at the significance level (0.05) between the responses of students in the experimental and control groups on the vocabulary test, choosing the experimental group that was taught using blended learning.

Keywords: *Integrated Learning, Vocabulary, English Language, And Instructional Approaches.*

INTRODUCTION

Vocabulary is the backbone of any language, so even those who show mastery of grammar may experience a failure to communicate without extensive vocabulary knowledge. People who don't have enough vocabulary will find many problems when communicating with others, so learning vocabulary is very important for learners because it helps them form sentences and express themselves in meaningful ways. Recent studies prove the many benefits of different technology-based instruction materials for effective verbal and written communication (Schmibt & Hegelheimer, 2004; Pazio, 2010; Khazaei & Dastjerdi, 2011). Therefore, many high education institutions are using blended learning as a supplement to develop students' vocabulary knowledge.

English vocabulary can be held as one of the most important skills requiring learners' focus to achieve the level of advanced and fluent use of the language. Nevertheless, there are many difficulties learners encounter in this respect, they are: vocabulary and expressions differ significantly from one context to another-, the same word can be used in several ways depending on the context and it is also important to bear in mind the cultures of the countries as they play a decisive role in defining what a particular word means and how it should be used. It is crucial to employ new and progressive methodologies for word acquisition which are not restricted to mere memorization but include more active and applied approaches to learning. They are the use of technological inventions in every aspect, for instance, the use of education-based applications that contain exercises that one has to complete on his or her own and the use of educational games that create room for one to be more interactive and more proactive. Word introduction can also be facilitated by use of comics and educational videos so that the people can relate to the contexts to which the words belong to (Ihbar & Said, 2019).

Blended learning as a separate method of education is used when learning vocabulary with the help of teaching English as a foreign language as it integrates traditional education with e-learning. Blended learning is useful to learners since it is flexible and convenient; the learners get to dictate the pace of the course and it can be done online. As a result of using technology in teaching and learning, it also offers learners a wider exposure to the course content since they may learn from any corner of the world (MESSAOUD, 2022).

In addition, the blended learning has significant meaningful for language teachers worldwide because it has added to the conventional context different types of the technology-based learning. Blended learning is defined as integrating face-to-face classrooms learning, computer-based learning, internet-based learning and associated

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mobile learning, by applying suitable teaching strategies that help in enhancing the learning objectives (Cecilia, 2016).

With the definitions given by Bilowski and Metcalf (2003) this form of delivery is aimed at enhancing the effectiveness in achievement of learning objectives through the right learning techniques that fit the right patterns to be incorporated for the right skills in the right person at the right time. Unlike the traditional learning in the classroom whereby the teacher interacts with the students, the blended learning involves use of multiple technologies that help in the improvement of the words to be learned and also the opportunities available in order to practice them.

Research Objectives

This study aims at identifying the effect of using blended teaching method on teaching vocabulary through the following objectives:

To determine whether the EFL learners' proficiency of English vocabulary can be influenced by using blended learning approaches.

To reveal that if blended learning approaches is useful for EFL students in teaching vocabulary

The Significance of the Study

Most EFL students have severe vocabulary deficits, making this study critical to investigating the impact of blended learning on vocabulary learning for these students. Many studies have demonstrated that blended learning can help EFL students learn vocabulary more effectively since it combines traditional and online learning. As a result, blended learning outperforms traditional learning in this area by improving students' capacity to comprehend and use terminology. This study aims to validate these findings and offer new insights into how to improve vocabulary learning using blended learning.

Research Question

What is the effect of blended learning-based teaching methods on teaching vocabulary to EFL students?

Research Hypotheses

H01: "There is no statistically significant difference at the significance level ($\alpha = 0.05$) between the average scores of the experimental group that learned using the blended learning strategy, and the control group that studied using the traditional method in the vocabulary acquisition test in the post-application of vocabulary."

LITERATURE REVIEW

Al-Sofi (2021) conducted a study that aimed to examine the effect of applying blended learning using the Blackboard learning management system on female students' achievement of the Intel course and the use of educational methods at King Saud University. The sample consisted of (46) female students in which a questionnaire was used to identify female students' experiences regarding using computers to measure Cognitive achievement, and an evaluation form to measure the skills of designing and implementing educational methods. The researcher concluded that there are no statistically significant differences between the average scores of the female students of the experimental group and the average scores of the female students of the control group in the cognitive achievement test in the application of blended education.

Saleh (2022) sought to demonstrate the impact of educational software and computers in blended education in improving educational outcomes. The study was based on the experimental approach, and the research population was represented by all kindergarten students in the First Zarqa Education Directorate. The size of the study sample was (41) male and female students. The results of the study found: There were differences in the average responses of members of the two study groups on the post-scale, and they were in favor of the experimental group that used educational software and online education platforms.

Al-Masry (2022) aimed to demonstrate the impact of online education platforms and software with face-to-face learning based on the principle of direct training in developing English language skills. The study relied on the

experimental approach, and the research community represented all third-grade students in Giza District, and the size of the study sample was of (60) male and female students, they were distributed equally into two experimental and control groups. The results of the study showed that there were differences in the pre- and post-performance of the two study groups and in favor of the post-application in the reading skill and writing skill. It also indicated that there was a positive effect with statistical evidence on the role of electronic learning platforms in Development of students' level of English in blended education.

Methods and Procedure

This section outlines the methodology and procedures employed in this research, covering topics such as the study's methodology, the selection of study participants, the validity and reliability of the study tool (the English vocabulary test), and methods for verifying its validity and reliability. Additionally, it provides a detailed description of the teacher's guide, which includes instructions on how to prepare English language curriculum lessons for English language studies. This chapter also presents the study's implementation techniques, the study design and variables (independent and dependent), and the statistical processing methods used to analyze the data.

METHODOLOGY

The quasi-experimental strategy was used, in which the population was randomly separated into two groups (experimental and control) and the effect of one or more independent factors on one or more dependent variables was varied. The underlying idea behind the quasi-experimental approach is that the researcher purposely creates situations in which different groups are exposed to varied experiences. The current study used a quasi-experimental approach to demonstrate the effect of the teaching method (blended learning strategy, traditional method) as an independent variable on the development of English vocabulary among intermediate school students at Mu'tah University as a dependent variable.

Population of the Study

The researcher intentionally selected the study participants from Mutah University's intermediate English language students for the academic year (2023-2024). This university was chosen to implement the experiment within it for several reasons, including: the cooperation of the university administration and its welcome to implement the study experience in school; the availability of educational means and tools necessary to implement the blended learning strategy; and the cooperation of the English department members in implementing the study, especially since they are specialized and highly qualified in teaching English.

The basic stage students were divided into two sections: Section (A) with 30 male and female students, and Section (B) with 30 male and female students. The two parts were randomly assigned to experimental and control groups, with Section (A) in the experimental group and taught using the blended learning strategy, and Section (B) in the control group and taught using the standard manner. Table 1 illustrates the division of the students into experimental and control groups.

Table (1) Distribution of Study Individuals into The Experimental and Control Groups

udent number	Grade	Teaching Method	The group
30	Grade 7 (A)	Blended Learning Strategy	Control group
30	Grade 7 (B)	Traditional Method	Experimental group
60	Total		

Equivalence of the Two Study Groups

The equivalence of the performance of the students of the two groups on the study tool in the pre-test was confirmed by conducting a "T" test for two independent samples (T-test), as in Table (2).

Table (2) Results of the (T-Test) To Confirm the Equivalence of The Experimental and Control Groups in The Pre-Test of The Vocabulary Acquisition Test

Significance level	Degrees of freedom	(t) value	Standard deviation	Arithmetic mean		Group	Pre-measurement
0.652	58	0.454	2.01	8.60		Experimental	Vocabulary Acquisition Test
			1.97	8.37		Control	

Table (2) demonstrates that there are no statistically significant differences between the average scores of students in the experimental and control groups on the vocabulary acquisition pre-test. This suggests that the pupils in the experimental and control groups were equivalent prior to the start of the experiment.

Study Tools

Vocabulary Acquisition Test

The vocabulary acquisition test was prepared by following the following steps:

Determining the test objective: The test aims to measure the level of vocabulary among primary school students in the English language.

Analyzing the content of the study topics, in order to determine what the educational content includes.

In light of the analysis of the study content, the objectives (behavioral outcomes) of the lessons were formulated, and their number reached (20) behavioral outcomes (objectives).

Formulating the paragraphs of the English vocabulary acquisition test in its initial form, and the vocabulary acquisition test consisted of (20) test questions, all of which were objective questions (multiple choice).

Apparent Validity and Content Validity of the Concept Acquisition Test

Apparent validity was confirmed in terms of the general appearance of the test in terms of the type of vocabulary, how it was formulated, its clarity and objectivity, and the suitability of the test for the purpose for which it was developed. The validity of the content was verified by presenting the test content with the attached table of specifications and behavioral outcomes to a group of (10) arbitrators specialized in teaching methods, to express their opinion on the suitability of the test questions, the scientific clarity and accuracy of the study questions, and the extent to which they included the study content, as well as judging the suitability of the test for the age group of intermediate school students at Mu'tah University. Amendments were made according to the arbitrators' comments, as the test questions that received an approval rate of (80%) from the arbitrators were accepted. Their comments were represented by the linguistic reformulation of some questions, and the English vocabulary acquisition test remained consisting of (20) test questions.

Application of the Vocabulary Acquisition Test on a Survey Sample

The vocabulary acquisition test was applied to a survey sample that included (30) male and female students, outside the original study sample, in order to determine the appropriate time for the test, and to determine the difficulty and discrimination coefficients for the test questions, in addition to ensuring the validity of the construction of the test questions, and the stability coefficient for the test, and the following is an explanation of this:

Determining the Appropriate Time for the Vocabulary Acquisition Test

The appropriate time for the test was determined according to the following equation:

$$\frac{\text{Average time taken by first three students to complete the test} + \text{Average time taken by last three students to complete the test}}{2}$$

The appropriate time for the English vocabulary acquisition test was (45 minutes).

Construct validity of the vocabulary Acquisition Test Questions

The construct validity of the vocabulary acquisition test was confirmed by extracting the Pearson Correlation coefficient between each question of the test and the total score of the dimension included in it, as in Table (3).

Table (3) Values of the correlation coefficients for the vocabulary acquisition test questions with the total score of the dimension included in it (n=30)

Correlation Coefficient	Question No.	Correlation Coefficient	Question No.	Correlation Coefficient	Question No.
**0.500	15	**0.447	8	**0.622	1
**0.632	16	**0.654	9	**0.609	2
**0.555	17	**0.842	10	**0.557	3
**0.690	18	**0.680	11	**0.722	4
**0.631	19	**0.687	12	**0.507	5
**0.622	20	**0.790	13	**0.780	6
		**0.731	14		7

** The correlation coefficient is statistically significant at the significance level (α≥0.01).

Table (3) shows that the correlation coefficients between each question of the test and the total score of the dimension included in it were positive and statistically significant at the level 0.01≥ (α), and the values of the correlation coefficients ranged between (0.447) and (0.842), which indicates the suitability of the questions in each dimension to measure what they were designed to measure.

Reliability of the Vocabulary Acquisition Test

The reliability of the vocabulary acquisition test was confirmed in two ways: the first was by extracting the internal consistency coefficient according to the Kuder-Richardson-20 equation (K,R-20), and the reliability coefficient reached (0.887), while the second method was to use the test-retest reliability method, by applying it to the survey sample and reapplying it to the same sample after two weeks, and the (Pearson Correlation) coefficient in this way reached (0.871), and these values are appropriate, and indicate the reliability of the vocabulary acquisition test.

Correcting the Vocabulary Acquisition Test

The vocabulary acquisition test consisted of (20) test questions, and the student was given a mark One for each correct answer, and zero for each wrong answer. Since the number of achievement test questions is (20) questions, the range of marks obtained by students is limited to (zero) to (20) marks.

Preparing the Educational Content According to the Blended Learning Strategy

In order to achieve the objectives of the study, the educational content was prepared for intermediate stage students in English according to the blended learning strategy, with the aim of giving faculty members participating in the implementation of education according to blended learning detailed information about the strategy, introducing them to the lessons formulated according to the blended learning strategy, and training them on how to apply the lessons. The teaching guide contained the following main elements:

The main objectives and learning outcomes for each lesson.

Educational resources: The sources for teaching the study unit formulated according to the blended learning strategy were varied, including: (curriculum, worksheets, videos supporting the educational content, computer, educational websites (zoom, Microsoft).

Evaluation: Formative evaluation was used during lectures by asking questions, answering them, solving worksheets in groups, and observing the students' performance in groups during the lesson using grading scales according to English skills. Finally, a vocabulary acquisition test is applied to ensure the effectiveness of the blended learning strategy.

Study Procedures

Obtaining the necessary approvals to conduct the study.

Reviewing the theoretical materials related to the research topic and its variables.

Designing a guide based on the pillars of the blended learning policy and its application methods.

Preparing the study tool: the vocabulary acquisition test, and verifying the indications of its validity and reliability.

Selecting and appointing the students participating in the study experiment, according to the learning method, into two groups: an experimental group that teaches according to the blended learning strategy, and a control group that teaches in the usual way.

Holding meetings with faculty members who taught students according to the blended learning strategy, with the aim of introducing them to how to implement the lessons according to the guide. Training faculty members on employing the blended learning strategy took (4) meetings.

Applying the vocabulary acquisition test to students in the control and experimental groups, for the purposes of statistical control.

Implementing the two treatments: the experimental (blended learning strategy) and the control (the usual method).

After completing the implementation of the two treatments, the English vocabulary acquisition test was applied to the students in the experimental and control groups (post-application). 10. Correcting the students' answers, transcribing them on the computer, and processing them statistically using the "Statistical Package for the Social Sciences" (SPSS-V.25) program, answering the study question and testing its hypothesis, then extracting and discussing the results, and coming up with recommendations in light of them.

Study Design

In light of the study hypotheses, a quasi-experimental design was adopted for two groups (experimental and control), as shown:

O1 X O1 EG:

O1 - O1 CG:

Where:

(EG, Experimental Group) = Experimental Group.

(CG, Controlled Group) = Control Group.

(O1) = Pre- and Post-application of English Vocabulary Acquisition Test.

(X) Experimental Treatment (Blended Learning Strategy).

(-) (Traditional Method).

Study Variables

First: The Independent Variable: It is represented by the teaching method, and it has two levels:

Teaching using the blended learning strategy.

Teaching in the traditional way.

Second: The Dependent Variable, which is:

Acquisition of English vocabulary.

Statistical Processing

The data were processed statistically using the appropriate statistical methods for testing and analyzing data through the program (SPSS-V.25), in order to answer the study questions and test their hypotheses, where the arithmetic means and standard deviations were calculated, and a one-way analysis of variance (ANCOVA) was conducted for the students' grades in the two experimental and control groups in the pre- and post-applications of the study tests, and to know the effect size (Effect Size) of the teaching method variable (blended learning, traditional method) in vocabulary acquisition.

Study Results

This section presents the results of the study, which attempted to reveal the effect of teaching methods based on blended learning in teaching vocabulary to English language students as a foreign language. The following is a presentation of the results of the study question:

Results of answering the study question, which reads: "What is the effect of teaching methods based on blended learning in teaching vocabulary to English language students as a foreign language?"

The testing the hypotheses emanating from it, which reads: "There is no statistically significant difference at the significance level ($\alpha = 0.05$) between the average scores of the experimental group that learned using the blended learning strategy, and the control group that studied using the traditional method in the vocabulary acquisition test in the post-application of vocabulary." Descriptive statistics were extracted for the students' scores in the two groups: the experimental (studied according to the blended learning strategy) and the control (studied according to the traditional method) on the vocabulary acquisition test, in the two applications (pre- and post-test).

Table (4) Descriptive Statistics for The Scores of The Students in The Experimental and Control Groups in The Two Applications (Pre- and Post-) Of the Vocabulary Acquisition Test

Group (Method)	Descriptive Statistics	Pre-test*	Post-test*
Experimental (Blended Learning)	Mean	8.60	18.07
	Standard Deviation	2.01	1.68
Control (Conventional Method)	Mean	8.37	11.10
	Standard Deviation	1.97	1.42

Table (4) shows that there is an apparent difference between the average scores of the experimental group that studied according to the blended learning strategy, and the control group that studied according to the usual method in the pre-application of the vocabulary acquisition test.

There is also an apparent difference between the average scores of the experimental and control groups on the post-application of the vocabulary acquisition test, as the average scores of the experimental group students were (18.07) with a standard deviation of (1.68), while the average scores of the control group students were (11.10) with a standard deviation of (1.42), meaning that there is an apparent difference between the average scores of the experimental group that studied according to the blended learning strategy, and the control group that studied according to the usual method on the post-vocabulary acquisition test, amounting to (6.97).

To reveal the significance of the difference between the average scores of the students of the experimental and control groups on the post-vocabulary acquisition test, and to statistically isolate the difference between the averages of the two groups in the pre-test, a one-way analysis of variance (ANCOVA) was conducted at the significance level ($\alpha = 0.05$), as in Table (5).

Table (5) Results of The One-Way Analysis of Variance (ANCOVA) For the Scores of The Students of The Experimental and Control Groups on The Post-Vocabulary Acquisition Test

Source of Variance	Sum of squares	Degrees of freedom	Mean square	F value	Level Significance	η2 for the effect size of the method

Pre-test	12760.417	1	12760.417	5265.147	0.001	
(accompanied)	728.017	1	12760.417	300.391	0.000	0.838
Group	104.567	58	2.424			
(Teaching Method)	13629.00	60				

*Statistically significant.

The results in Table (5) show that there is a statistically significant difference between the average scores of the experimental group that studied according to the blended learning strategy, and the control group that studied according to the traditional method on the post-vocabulary acquisition test, as the value of (f) calculated for the difference between the two groups reached (300.391), with statistical significance at the level (α = 0.001), meaning that there is a statistically significant difference between the post-vocabulary arithmetic averages, attributed to the teaching method used. To know the size of the effect of the teaching method variable on vocabulary acquisition among primary school students, the value of Eta square ($\eta 2$) was calculated, and it reached (0.838), and thus it can be said that (83.8%) of the variance in vocabulary acquisition is due to the variable of the teaching method used, and according to Cohen's simulation (between (0.24 - 0.10) indicates a low effect, between (0.39 - 0.25) indicates a medium effect, from (0.40) and above indicates a large effect) (Cohen, 1977) in interpreting the effect of the independent variable on the dependent variable, the size of the effect is large. The difference was in favor of the students of the experimental group who studied according to the (blended learning strategy), as the arithmetic mean of their scores reached (18.07), which is higher than the arithmetic means of the scores of the students of the control group who studied according to the (traditional method), which amounted to (11.10). Therefore, the null hypothesis that states: "There is no statistically significant difference at the significance level (α = 0.05) between the average scores of the experimental group that learned using the blended learning strategy and the control group that studied using the traditional method in the vocabulary acquisition test in the post-application of vocabulary" was rejected. The alternative hypothesis that indicates the superiority of the blended learning strategy in enhancing vocabulary acquisition for the English language, compared to the traditional teaching method, was accepted.

DISCUSSION OF THE RESULTS AND RECOMMENDATIONS

This section includes a presentation to discuss the results of the current study that aimed to know the effect of teaching methods based on blended learning in teaching vocabulary to students of English as a foreign language. The results of the study hypothesis were discussed as follows:

Discussion of the Main Study Question

To answer the main study question that states: "What is the effect of teaching methods based on blended learning in teaching vocabulary to students of English as a foreign language?"

The null hypothesis was tested, which states: "There is no statistically significant difference at the significance level (α = 0.05) between the average scores of the experimental group that learned using the blended learning strategy, and the control group that studied using the traditional method in the vocabulary acquisition test in the post-application of vocabulary." The results showed a statistically significant difference at the significance level (α = 0.05) between the average answers of the members of the experimental group and the control group in the vocabulary acquisition test in favor of the experimental group, which indicated the superiority of teaching English as a foreign language using the blended learning strategy.

 This result may be attributed to the fact that the blended learning strategy contributed to providing an educational environment that enhanced students' interaction with each other, with the aim of performing the educational tasks required of them, through the stages of the strategy, which contributed, due to its sequence and regularity, to raising the efficiency and quality of the educational process, in addition to achieving the required educational goals accurately and efficiently. Through the stages of blended learning, a cognitive structure was formed around the topic of the relevant lesson for students, in a way that contributed to attracting

their attention and arousing their curiosity and motivation to learn, which helps in determining what students will need to be able to benefit during the educational situation. This learning style also helped students to adjust their understanding of the reality around them in a way that enables them to determine the steps to implement the educational task required of them with the development of alternatives. In addition to enabling them to choose the most appropriate alternative at the stage from among the set of proposed alternatives in light of the comparison criteria and the results they seek to achieve. In addition to giving students space to evaluate their work themselves, which enhances their feeling that it constitutes a basic pillar in education.

Using this strategy helped transform students from recipients of information and knowledge to seekers of it, and may have contributed to enhancing their ability and skill to focus and understand knowledge, which was evident in their answers to the concept acquisition test questions.

This result was consistent with many previous studies that used the blended learning strategy and measured its effect on vocabulary acquisition, such as: Tosun's study (2015), and Ibhat & Said's study (2018), which proved the existence of an effect of blended learning on vocabulary learning. In light of this result, the null hypothesis was rejected and the alternative hypothesis was accepted, which states that: "There is a statistically significant difference at the significance level (0.05) between the average scores of the experimental group that learned using the blended learning strategy, and the control group that studied using the traditional method in the concept acquisition test in the post-application."

This indicates the superiority of the blended learning strategy in improving the level of vocabulary among primary school students at Mu'tah University, compared to the traditional teaching method. The effect size of the blended learning strategy at the vocabulary level was (0.838) with a large effect size, which indicates the effect of the independent variable on the dependent variable.

Recommendations

Raising awareness among teachers and learners about the importance of the blended learning strategy in the teaching process as an active learning strategy that places students as key actors in their learning.

Encouraging English language teachers to present scientific content in a way that attracts students' attention and allows them to absorb information.

Designing English curricula at different educational levels in light of the use of blended learning in education.

Conducting similar studies at different age levels and educational stages to prove the effectiveness of blended learning and its impact on vocabulary.

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