The Comparative Effectiveness of Conventional and Online Approaches to Acquiring Vocabulary

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Abstract

Many people who are learning a second language are interested in determining the most effective or optimal strategy, activity, or method for acquiring vocabulary in that language. This is because the process of learning vocabulary in a second language is difficult and time-consuming. In spite of the plethora of research that provides recommendations and conclusions on vocabulary learning, such as the benefits of maintaining a notebook, periodically reviewing vocabulary, and putting vocabulary items in context, it is still difficult to provide a definitive answer to this question. The purpose of this research is to investigate and assess the efficacy of traditional teaching methods that are utilized in upper-intermediate Academic English classes in comparison to the effectiveness of online vocabulary instruction. The students who were assigned to the control group used flashcards and notebooks to study vocabulary terms that were taken from ten different reading passages. WordChamp was utilized by the students who were a part of the experimental group in order to conduct an in-depth analysis and study of the particular vocabulary words that were offered in the texts. Additionally, both groups were subjected to frequent evaluations of the language items that were being used. Evaluation of the effectiveness of the two strategies was carried out with the help of the post-test. Students who were part of the experimental group had a better recollection of the terms they had learned online, according to the findings of a follow-up evaluation that was conducted three months later. This was in comparison to the students who were part of the control group.

Introduction

"I am not afraid of computers." Apprehension arises within me at the possibility of their absence. A. Asimov, Joshua It is a tedious and time-consuming process to acquire and train vocabulary in a second language. Learning a second language also demands a large amount of time. Students are therefore actively searching for the way of vocabulary acquisition that is the most advantageous or efficient at the moment. However, as was to be expected, their initial strategy consists of making an effort to commit every unknown term to memory. It has been found through research that students with more experience often gain vocabulary through contextual learning, but those with less experience, with very few exceptions, tend to prefer autonomous learning, particularly through the memorization of word lists (Ellis, 1994, page 553). In a similar vein, a significant portion of vocabulary instruction is simply centered on the introduction of new words during activities. This approach does not involve the reinforcement of previously acquired knowledge or the provision of assistance to students in the process of constantly reviewing previously taught terms until they have achieved mastery.

Computers and the Internet have been deployed in the field of foreign language instruction in order to circumvent this limitation and provide both teachers and students with a wider variety of opportunities and activities to choose from. There have been a number of studies that have demonstrated the positive effects that computer-assisted training has on the development of reading comprehension skills as well as the acquisition of vocabulary. There is a wide variety of methods that can be utilized in order to acquire vocabulary through the utilization of modern

technology. These include online reading activities that incorporate glossing capabilities, specialized software for learning vocabulary, and online platforms such as WordChamp with the purpose of acquiring vocabulary on an individual basis. At the moment, it is of the utmost importance to take into consideration a number of different strategies for computer-assisted vocabulary education. This is due to the extensive variety of components that were included in the current study.

Literature Review

Web-based reading comprehension and vocabulary instruction

When compared to the traditional learning environment, the computerized learning environment was found to have a substantial impact on the development of critical literacy abilities in English as a Foreign Language (EFL). This was discovered by research carried out by Levine and colleagues in the year 2000. The research primarily focused on how English as a Foreign Language (EFL) critical reading abilities can be improved in an environment that is computer-networked. In the academic reading class, the arrival of computers brought about a change in the way teachers and students interacted with one another, which in turn brought about a change in the roles of both the EFL instructor and the student. On the other hand, Levine et al. (2000) contend that a computer-networked environment is beneficial for children when they are provided with access to authentic reading material in a classroom environment that is simultaneously encouraging and safe for language development. Through the use of the computerized system, educators were able to provide timely support to students without compromising their independence in terms of picking materials or the pace at which they conducted their work.

According to the findings of Peterson (1997), children who have a greater degree of autonomy in their reading education are more likely to freely engage with electronic reading materials outside of the classroom. Students should be moved away from graded resources and toward actual ones, according to Johnson and Heffernan (2006), who emphasize the significance of this practice. As part of the Short Readings Project, which is an innovative reading exercise that operates in partnership with English Trailers (www.english-trailers.com), this was accomplished as a component of the project. The authors advocate the utilization of materials that are concise yet complete, the provision of many opportunities for students to exercise their knowledge, and the transmission of practical skills in order to guarantee that students will find the process of obtaining fundamental terminology to be both entertaining and powerful.

A substantial amount of research has been carried out to investigate the ways in which the incorporation of a variety of materials into an online hypertext environment can successfully enhance reading and vocabulary acquisition. An internet-based educational environment was developed by Dreyer and Nel (2003). This environment was produced by using elements of a physical interactive study guide, instructor contact sessions, and a Varsite platform that was specifically designed for the purpose. According to the findings, introducing strategic reading instruction into a learning environment that makes use of technology results in increased reading comprehension as well as enhanced application of reading techniques. According to Horst et al. (2005), students are provided with a wide variety of scientifically validated strategies for learning and remembering new languages. These strategies include the utilization of concordance, dictionaries, and taking online tests. By integrating reading passages with activities such as completing an online quiz provided by the Word Bank, reading hypertext, examining concordance examples, utilizing the cloze-passage maker, and referring to an online

dictionary, students were able to enhance their retention of vocabulary words and improve their comprehension of the text. The formation of a memory link between the form of a word and its meaning can be improved through the use of a combination of reading passages, automatic scoring, email feedback, randomization, and various online vocabulary activities (such as multiple-choice, fill-in, and cloze passages), according to research that was conducted by Nelson in 1998. The use of mechanical remembering techniques and the incorporation of newly learnt language into relevant settings are both efficiently addressed by these exercises.

Vocabulary practice software

The objective of research conducted in academic institutions has been to develop computer-assisted vocabulary acquisition systems that provide users with the ability to acquire, practice, and evaluate vocabulary in a manner that is very efficient. According to Mayer and Sims (1994), the primary objective of multimedia vocabulary learning settings is to improve students' ability to establish associations between visual and verbal representational systems. This, in turn, will increase students' vocabulary proficiency, reading comprehension, and the speed at which they recognize words that are commonly used. An investigation was carried out by Tozcu and Coady (2004). The configuration of these environments for the purpose of acquiring vocabulary in a variety of languages is extremely adaptable and is dependent on the requirements of the students as well as the academic environment. In their study from 1996, Chun and Plass paired comments for each vocabulary word with video as a visual organizer. This allowed them to provide both linguistic and visual information. The Tutorial CALL paradigm, which includes study, practice, and review approaches, was presented by Tozcu and Coady (2004) with the intention of enhancing individualized vocabulary learning.

One way in which this was accomplished was by providing students with the opportunity to place terms in a personal list for the purpose of further study, or by establishing reminders to employ support words through translation, synonymy, antonymy, or paraphrasing. When it comes to creating a learning environment that effectively aids vocabulary acquisition in young learners, Sun and Dong (2004) emphasized the significance of utilizing an engaging framework, such as a well-known Disney animation, as an example. With that being said, they made the observation that the attractiveness of the educational environment does not, on its own, result in an improvement in the acquisition of vocabulary in a second language unless suitable learning assistance is provided. This assistance may include sentence-level translation and target warming-up. Students who used text and image annotations performed significantly better in the subsequent vocabulary evaluation than students who used text and video annotations (Chun and Plass, 1996). This was the case when comparing the two types of annotations. The results of this study indicate that the utilization of static graphics rather than multimedia can be beneficial in terms of improving word memorization and reading comprehension. A study was carried out by Nesselhauf and Tschichold (2002) with the purpose of determining whether or not computer-assisted language learning (CALL) vocabulary software is effective in imparting knowledge of collocations and facilitating their acquisition. Consequently, they developed universal standards for English vocabulary settings that can be applied irrespective of any specific (educational) textbook or dictionary. These guidelines can be found in the following sentence.

- a clearer definition of the program's target competence level (and/or a division into varying degrees of difficulty);
- a constant contextualization of the knowledge acquired;

● greater adaptability in the feedback (at least to prevent the rejection of alternate correct responses);
● variation in the exercises, if not total diversity; and
● the addition of instructional portions in addition to testing sections.
● an ongoing process of putting what is learned into perspective; ● a more precise description of the program's intended level of competence;
The exercises should be varied, if not completely diverse; the feedback should be more adaptable (to avoid rejecting alternate correct solutions); and there should include instructional parts in addition to testing sections.
● A clearer indication of the program's intended level of competency, broken down into different difficulty levels;
● Regular application of learned material to real-world situations;
● A feedback system that is more adaptable, allowing for valid alternative responses to be considered;
● A wider range of exercises, if not total variety; and
● Instructional segments included with assessment sections.
Groot (2000) places a strong emphasis on the significance of developing computer-assisted vocabulary learning settings that are in accordance with well-established theories of word acquisition. This will improve the process of firmly integrating the words that have been learned into memory, which will lead to retention over a longer period of time. This has led to the development of a system that is fully automated.
The word acquisition program includes a number of components, including the following: analyzing the physical structure, sound patterns, sentence structure, meaning, writing style, and word combinations of the new word; storing the word in the internal vocabulary through the utilization of interconnected networks; and reinforcing the storage by exposing the word in various contexts that emphasize its various properties. In addition, as Ma and Kelly (2006) have emphasized, it is of the utmost importance to develop computer-assisted vocabulary learning software that serves the dual purpose of facilitating the acquisition of both explicit and implicit vocabulary.

This program should also have the goal of teaching pupils practical learning strategies and assisting them in becoming excellent vocabulary learners. Following the utilization of a visually sophisticated organizer that provides background information on the topic (Chun & Plass, 1996) and a concise dictionary that includes explanations, word combinations, sample sentences, and usage notes, the subsequent step is to engage in active reading in order to apply and reinforce the selected vocabulary within a specific context. When it comes to vocabulary acquisition, the learner training component may combine a number of different tactics, such as alliteration, rhyming, imagery, and word association respectively. As Ma and Kelly (2006) have proven, it is also possible to make use of memory strategies for words, which include the ability to display the translation into the first language.

Hypertext-based glossing in foreign language learning

By providing vocabulary lookups, hypertext-based glossing, which is a method that includes brief definitions of unknown words into the text (Rott, Williams, and Cameron, 2002), significantly simplifies the experience of reading with the use of a computer. Teachers have the option of enabling it for all of the words in the text or applying it selectively by using a dictionary search system like WordChamp Web Reader. According to Koren (1999:6), hypertext technology enables users to gain access to meanings in a more expedient and easy manner, in addition to providing their with extra visual and interactive benefits. This finally results in a setting that is

more immersive and effective for the acquisition of vocabulary in a foreign language and language. The practice of glossing has been the subject of a significant amount of research, with a particular emphasis placed on the efficiency of multiple-choice glosses in terms of enhancing recall (Rott et al., 2002). Other research have investigated the use of multimedia links, such as still photos or videos, to show the definition, pronunciation, and meaning of target words in printed text (Al-Seghayer, 2001; Lomicka, 1998; Al-Seghayer, 2001). These studies explored the use of multimedia links to illustrate the meaning of target words. In addition, research has been conducted to investigate the utilization of glosses that include either text, visuals, or a combination of the two (Yoshi, Flaitz, 2002; Yoshi, 2006). Additionally, glosses that contain the learner's original language have also been investigated (Taylor, 2006).

According to research conducted by De Ridder in the years 2000 and 2002, it was discovered that invisible linkages were more successful in boosting L2 reading than highlighted annotations and unhighlighted links. This result may be the result of the learners' desire to make decisions that are more deliberate, such as encouraging the use of vocabulary hypertext tools like WordChamp Web Reader to provide contextual information for each word that is found in the text. Roby (1999) contends that a computer-assisted environment ought to provide students with the opportunity to annotate electronic hypertext, mark terms, and automatically aggregate these words into printable lists for their own personal use. According to the current emphasis on learner autonomy and collaborative learning, this function is offered in particular online vocabulary management systems, such as WordChamp. WordChamp is one example of such a system. By conducting an analysis of meta-analytic experimental research that investigate the impact of glosses in the first language (L1) on reading comprehension in the second language (L2), Taylor (2006) offers a case for the utilization of glossed texts. It was shown that there was a substantial difference between the study groups who utilized computer-assisted L1 annotations and those that did not employ such annotations. In comparison to the conventional, paper-based methods of L1 glossing, learners displayed a significantly higher level of comprehension when they were provided with computer-based annotations in their first language.

An investigation was carried out by Lokiska (1998), which involved the examination of individuals who read a text under three unique conditions: complete glossing, restricted glossing, or no glossing at all. As a result of the research, it was discovered that students who were provided with comprehensive glossing were more likely to identify causal relationships. As a result, automated reading that is completely disregarded may be able to assist enhanced comprehension of the material. However, there have been counterarguments against glossing. These counterarguments are mostly based on the fact that inferred meanings are easier to remember than meanings that are provided by glosses, and glossing may hamper the capacity to forecast based on context (Koren, 1999; Rott et al., 2002). "Click happy behavior" is a habit that Roby (1999, page 98) refers to as "click happy behavior." Furthermore, vocabulary support software should discourage readers from clicking an excessive amount. Participating in such an activity may potentially result in learning that is superficial and fleeting. The use of multiple-choice glossing was proposed by Hulstijn (1992) as a potential solution to the problem.

This would allow the advantages of glosses and inference to be combined into a single solution. It was his contention that this method eliminates the difficulties that are brought about by insufficient background and the possibility of making inaccurate judgments regarding the situation. websites that are accessible on the

internet that are designed to improve one's understanding of words and the meanings they convey.

In tandem with the growing popularity of computer-assisted vocabulary acquisition through the Internet, there has been an increase in the significance of designing and implementing online learning management systems that are specifically geared toward vocabulary. Creating an optimal learning environment for the purpose of boosting learners' proficiency in their target language can be accomplished through the deliberate study of vocabulary, which is supplemented with interactive vocabulary exercises and word lists that are provided by the learners themselves (Spiri, 2007). Chun (2001) proved that the use of audio narration of the text, an online multilingual dictionary, and a glossary within the software can improve reading and vocabulary in a Web-based environment. This was demonstrated by the fact that the software included a glossary. The research conducted by Chun centered on monitoring the utilization of online multimedia support resources in order to provide individualized aid with studying. The construction of a personal learner profile within the framework of mobile-assisted learning was accomplished through the utilization of recorded learner access to vocabulary activities that were analyzed. The precise terminology that the individual struggled with is broken down in great detail in this profile pertaining to the individual. According to Stockwell (2007), this made it possible for the students to have a greater exposure to the objects that were having problems as opposed to those that were less likely to produce problems.

According to Dreyer and Nel (2003), Varsite, which is often referred to as a learning content management system, is an environment that facilitates collaboration and is distinguished by a language that is considerably more advanced. The ability to transmit digital learning content that has been developed, stored, reused, maintained, and stored in a central object repository is made available to teachers. In addition to this, it incorporates a repository for learning objects, an automated system for the creation of material, and a dynamic interface for the delivery of the content. Furthermore, it incorporates tools for monitoring and reporting on the progress that has been made. Ariew (2006) discussed the development and application of a software template that generates hypermedia texts for students who are learning a second or foreign language. This was done in order to highlight the inclusive characteristics of an online vocabulary acquisition system. Through the implementation of this technique, educational materials will be developed, and a method will be provided for displaying annotations in a variety of media, such as video, text, graphics, and audio recordings, in the language that is being targeted or the native language. In order to improve vocabulary in an English as a Second Language classroom, Horst et al. (2005) suggest using a number of internet resources.

A concordance, dictionary, cloze-builder, hypertext, and database with an interactive self-quizzing function are some of the types of materials that are included in this collection. On the website www.lextutor.ca, the general public has access to all of these resources. Through the employment of these tools, it is believed that students would be able to retain more information because they will be provided with additional material to study that goes beyond only acquiring vocabulary and definitions, hence inspiring critical thinking. According to Zapata and Sagarra (2007), the use of online workbooks provides students with the opportunity to improve their grammar and vocabulary skills in a second language (L2) by allowing them to progress at their own pace, meet their specific requirements, and actively construct knowledge rather than passively receiving it (Collentine, 2000, page 44; Zapata and Sagarra, 2007, page 154). Students are enabled to formulate and evaluate hypotheses

more effectively through the use of online workbooks, which provide them with enough opportunities to access them and receive feedback in a timely manner. After a semester of instructional intervention, Zapata and Sagarra (2007) discovered that there were no statistically significant differences between the groups that used online workbooks and those that utilized paper workbooks. This was the conclusion that they reached in their research. The intervention consisted of utilizing ANGEL, which is a vocabulary management system that is accessible online. The group that used an online workbook did better than the group that used a paper workbook throughout the second semester. A preliminary investigation was carried out by Spiri (2008) in order to appraise the effectiveness of WordChamp drilling in comparison to paper-based frequency word vocabulary research.

The purpose of this study was to determine whether or not it would be reasonable and beneficial to implement the WordChamp vocabulary management system into English communication classes at the university level. WordChamp is considered to be the more effective method for acquiring specialized vocabulary for educational purposes, despite the fact that both paper study and WordChamp are good for this purpose. According to Loucky's (n.d.) research, a variety of online tools that were built with the express purpose of accelerating students' acquisition of advanced vocabulary and literacy abilities were investigated. The vocabulary management system known as Wordchamp is an example of a technology that succeeded in attracting a substantial amount of interest. In addition to assisting in the acquisition and storage of multilingual notes associated with the reading of online materials, WordChamp can also be utilized for vocabulary development activities either before to or following the reading of the text. For the purpose of enhancing vocabulary acquisition and comprehension of online reading, Loucky suggests making use of WordChamp as a tool. According to Loucky (nd), the most effective methods for acquiring more complex vocabulary include the production of online flashcards, group discussions, quizzes, and rapid corpus analysis. They are also the most efficient.

Instruction and training in various ways of vocabulary acquisition for students of vocabulary Vocabulary learning strategies, which are among a wide variety of metacognitive, cognitive, and socio-affective language learning techniques (O'Malley, Chamot, 1990; Hedge, 1993), are intended to facilitate the acquisition of new lexis in a second or foreign language as well as the consolidation of words that are already in use (Schmitt, 1997). It has been found through research that a sizeable percentage of students do, in fact, make use of particular methods for the purpose of acquiring vocabulary, even if they are not conscious that they are doing so (Schmitt, 1997). It is of the utmost importance to modify tactics in order to cater to the requirements of particular students. This is due to the fact that Nassaji (2003) discovered that various techniques have varying effects on the academic performance of students. Furthermore, empirical studies have shown that learners are more likely to be successful when they apply a variety of learning strategies (Chamot, 2004; Johnson and Heffernan, 2006). This is especially true when the learners are attempting to learn something new. There have been a great number of efforts made in order to create a thorough taxonomy of the methods that are utilized in the process of vocabulary learning.

Metacognitive, determinational, social, memory, and cognitive are the five separate domains of vocabulary learning that Schmitt (1997) outlines from the perspective of vocabulary acquisition. These categories encompass a total of 58 different activities in their whole. An eight-fold scale of main cognitive processes is used by Loucky (2006) to identify forty different vocabulary learning procedures.

These procedures include evaluating, accessing, archiving, analyzing, anchoring, associating, activating, anticipating, reevaluating, and relearning/remeeting vocabulary items. There are a number of different learning methods that can be implemented in a reading setting. Some of these tactics include making use of contextual signals that are present in the surrounding text, consulting a dictionary (which can be accessed through hyperlinked texts), maintaining notes, rehearsing, and entering information (Gu, 2003). In the first place, computerized exercises can be implemented as a supplement to the "expanded rehearsal" technique (Horst et al., 2005), which can be utilized to increase reading comprehension and vocabulary education.

It is a widely held belief that proficient learners have the ability to consciously choose, carefully examine, and critically assess the approach that they employ in order to achieve their ultimate goal. On the other hand, learners who are unsuccessful use learning tactics that are similar to those of their peers without being aware of it and without having a specific goal in mind (Gu, 2003). However, as Dreyer and Nel (2003) point out, a sizeable number of students who are reading under pressure do not possess the metacognitive control and awareness of reading strategies that would prevent them from picking tactics that are unproductive and inefficient and have no strategic aim. The reason for this is that a significant number of students do not possess the essential preparedness to deal with the reading requirements that are required in higher education. Atay and Ozbulgan's 2007 research Through the process of individualizing the language learning process and enhancing students' awareness of techniques they can employ to continue learning outside the confines of the language classroom, strategy training for vocabulary acquisition in a computer-assisted environment helps students become more effective learners. According to Cohen (1996) and Oxford (1990), self-direction is a key component in the process of encouraging the deliberate development of students' capabilities. It creates an environment that fosters independence in vocabulary acquisition and provides students of English as a foreign language with a wide variety of options to choose from. The impact of strategy training on crucial learning outcomes was investigated by Nunan (1997).

These outcomes were student motivation, strategy understanding, perceived strategy utility, and actual strategy deployment. It was observed that the experimental groups performed significantly better than the control groups in the areas of knowledge, motivation, and deployment. On the other hand, there was no such improvement observed in the area of actual strategy deployment. The phases that are outlined by Atay and Ozbulgan (2007) are proposed as a procedure for strategy instruction. These phases include teaching students to comprehend words in a variety of contexts, teaching them to recall words through the use of a variety of memory techniques, emphasizing the entire spectrum of strategies, and allowing students to choose the one or more strategies that work best for them. On the other hand, Winograd and Hare (1988; quoted in Carrell, 1998) proposed a list of five components that they believed to constitute an all-encompassing description of the strategy that a teacher would implement: It is necessary to discuss the following topics: (1) the definition of the strategy; (2) the justification for its acquisition; (3) the methodology for its implementation; (4) the selection of the right time and location for its implementation; and (5) the evaluation of its potential effectiveness.Educators should make it a habit to demonstrate to their pupils the procedure for determining whether or not they are proficient with the method. In addition to this, they should reinforce their explanation with recommendations for corrective measures to address any concerns that may still be present.

Methodology

Purpose

The purpose of the study was to find out whether online vocabulary teaching would be more effective than the traditional instruction.

When compared to typical classroom settings, the purpose of the study was to determine whether or not online vocabulary instruction would bring more benefits to students.

Research Questions

Participants

A total of 38 students from a variety of academic fields were selected to participate in the study. The research was conducted in a private institution in Ankara, Turkey. They focused their studies on English in order to achieve a passing score on the university's internal competency examinations. The ages of the individuals of the group ranged from 17 to 19 years old. Everyone who took part in the experiment had no prior experience with experiments of this kind and had never participated in any other experiments.

Data Collection Instruments

A pre-test and a post-test were utilized in the research project. These tests were developed by utilizing questions that were gathered from earlier assessments of proficiency. Ten academic reading passages and five multiple-choice questions were included in the examinations. The questions were designed to assess the vocabulary that was presented in the readings. The number of correct responses that were provided on both the pre-test and the post-test were the basis for the calculation of the scores. One point was provided for a response that was understood correctly, whereas no points were given for a response that was not understood.

Variables of study

Two distinct modes of education were investigated as independent variables in this study: conventional classroom instruction and vocabulary acquisition through online platforms. The outcomes that were measured in the post-test and the follow-up post-test are the dependent variables that are being investigated in this study.

Data Collection Procedure

During the first day of instruction, the participants were given a succinct explanation of the purpose of the study, after which they were given a permission form that had all of the relevant information. Following the completion of the consent form and the students' declaration of their desire to take part in the research, the instructors gave the pre-test to the students. Through the utilization of the test findings and the execution of an independent sample T-test (refer to Tables 1 and 2), it was feasible to determine whether or not there were significant differences between the two groups of participants at the 0.05 alpha level. At a significance level of 0.05 or higher, the findings of the pre-test were statistically significant ($t=0.457$; $df=36$; $p=0.160$). The evidence presented here provided support for the hypothesis that, previous to the beginning of the investigation, there were no discernible differences between the two groups. Both of these categories were included in the research, and its findings revealed that there were no statistically significant differences between them.

Traditional teaching methods were applied by a particular class (referred to as the control group) during the course of a period of five weeks.

These methods included the study of vocabulary items in 10 reading passages through the utilization of vocabulary notebooks, cards, and paper dictionaries among other resources. WordChamp was utilized by the experimental group, which consisted of a different class, in order to investigate the vocabulary terms that were present in the sections. Additionally, both groups were subjected to frequent evaluations of the language items that were being used. The control group consisted of twenty individuals, while the experimental group consisted of eighteen people. The sample consisted of both groups. The same instructor was responsible for providing lectures to the group for a total of three hours per week over the entirety of the five-week academic session. Over the course of the last day of training, the instructor administered the post-test to both groups of students. Through the process of comparing the scores obtained before and after the examination, a statistical analysis was carried out in order to ascertain whether or not there was a discernible distinction between the two groups.

Data Analysis And Results

The validity of the null hypothesis, which claims that there will be no change in the scores of the learners between the experimental group and the control group, was evaluated with the help of the t-test. This was accomplished by contrasting the outcomes of the post-tests taken by the two groups. In order to evaluate whether or not there were significant differences between two groups of participants at a significance level of 0.05, the independent sample T-test was utilized in the SPSS software package to examine the posttest data for both the experimental group and the control group. If you require further information, kindly see Tables 3 and 4. The significance threshold was found to be less than 0.05 in the study that was done to answer the second research question, which was "Is online vocabulary teaching more effective than traditional instruction as measured by the participants' follow-up post-test results?" ($t=-3.672$; number of degrees of freedom = 36; $p=0.001$). Because of this, it was found that there was a statistically significant difference between the two groups, even after the follow-up post-test was carried out two months after the initial test.

Discussion

The results of the post-test reveal that participants in the experimental group, who used WordChamp to study vocabulary, demonstrated superior performance than those in the control group, who engaged in traditional activities for the acquisition of vocabulary. The findings of this study are in agreement with the conclusions that were established by Nelson (1998), Horst et al. (2005), Spiri (2008), and Loucky (nd.) on the favorable effects of various vocabulary exercises on the establishment of a memory connection between the structure of a word and the importance of that term. In addition to doing tasks that required them to utilize paper, the participants were provided with the opportunity to learn language through a variety of strategies and activities, and they were able to benefit from these. Online vocabulary instruction, as stated by Atay and Ozbulgan (2007), has the potential to assist students in becoming more self-directed learners by teaching them skills that may be utilized outside of the classroom setting for the purpose of self-study.

The results of the follow-up post-test, which was administered two months after the initial post-test, still shown a significant difference between the two groups, which is consistent with the findings of the initial post-test. The counterarguments against glossing (Koren, 1999; Rott et al., 2002) were challenged by this discovery.

These counterarguments argued that glossing would limit the memorability of interpretations supplied by glosses by discouraging conjecture based on context. People who used the glossary function of the WordChamp reader, on the other hand, were able to remember a greater number of terms, according to the findings of this study. In addition to the traditional paper-based exercises, it is vital to emphasize that each and every participant received coaching while utilizing either WordChamp or the traditional activities. The individuals were strongly encouraged to employ a variety of strategies, such as deducing relevance from the context in which it was found. In spite of the fact that it was obvious that the participants in the experimental group enjoyed utilizing the glossing feature of WordChamp, they made a conscious effort to avoid indulging in excessive clicking or shallow learning, as was documented in earlier groups (Roby, 1999).

Conclusion

As contrast to using traditional or paper-based approaches, the purpose of this study was to demonstrate that students may effectively learn new vocabulary in academic reading materials by using the online glossing application WordChamp. This demonstrated that students can learn new vocabulary more efficiently. Not only does WordChamp assist students in expanding their vocabulary, but it also has the potential to boost their motivation and independence. Furthermore, this research provides evidence in support of the concept that students should have access to a wide variety of methods from which to pick, rather than being limited to methods that are generally regarded to be good without taking into consideration the variances that exist between individuals. According to the findings of research, a significant proportion of students who are learning make use of particular strategies, and the effect that each method has on their level of accomplishment is distinct.

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