

THE EFFECT OF USING CHATGPT ON VOCABULARY ACQUISITION AMONG FIRST-YEAR EFL STUDENTS

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There has been an explosion of interest in both AI technologies and educational technology, caused to a large degree by the proliferation of AI-powered education applications, including ChatGPT. ChatGPT (an AI program developed by OpenAI) is a sophisticated, natural language-processing system capable of producing human-like responses to a variety of inputs. Because of this, ChatGPT will likely be a valuable addition in terms of SLA and the development of vocabulary in particular.

أثر استخدام برنامج ChatGPT على اكتساب المفردات لدى طلاب الصف الأول في برنامج اللغة
الإنجليزية كلغة أجنبية

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شهدت تقنيات الذكاء الاصطناعي وتقنيات التعليم اهتماماً متزايداً، ويعود ذلك إلى حد كبير إلى انتشار تطبيقات التعليم المدعومة بالذكاء الاصطناعي، ومنها برنامج ChatGPT. يُعدّ ChatGPT برنامج ذكاء اصطناعي طوّره شركته (OpenAI) نظاماً متطوراً لمعالجة اللغة الطبيعية، قادراً على إنتاج استجابات شبيهة باستجابات الإنسان لمجموعة متنوعة من المدخلات. لذا، من المرجح أن يُشكل ChatGPT إضافة قيمة في مجال اكتساب اللغة الثانية، ولا سيما في تنمية المفردات.

Chapter One

Introduction

1.1 Background of the Study

It is widely accepted that knowledge of vocabulary is one of the cornerstones to Language proficiency. Within the area of Applied Linguistics, vocabulary development is considered key to improving an EFL students' (first-year) ability to read and understand written materials as well as their ability to write in English, understand what they hear (listening comprehension) and speak fluently in English. For EFL students at the university level, the lack of an adequate vocabulary can be a serious barrier to successfully using the English language and making academic progress. Therefore, there has been a long-standing tradition of research and development of teaching strategies and resources to facilitate vocabulary acquisition.

Due to the growing influence of Advanced Technology and the use of computers in the language educational area, Computer-Aided Language Learning (CALL) has now become a widely researched area. Traditional CALL tools have developed over time from software applications that allow learning languages, through to content-based sources such as online dictionaries, towards interactive or adaptive systems of academics. Artificial Intelligence (AI)-based techniques such as ChatGPT, belong to the next phase of this development

through offering users a more personalized and dynamic, contextualized method of developing their language-skills. In contrast to traditional CALL systems, AI-enabled products such as ChatGPT provide users with simulation opportunities for authentic, meaningful dialogue; as well as with instant feedback, contextualized vocabulary items, and full use of their vocabulary.

Iraqi universities, such as the University of Mosul, report that first-year students enrolled in English departments encounter obstacles concerning acquiring vocabulary to succeed in their studies; these barriers may arise due of variances between the methods used by public schools and those used at universities (i.e., differences in expectations for learning); the lack of opportunities to use English outside of the classroom; and the extensive use of conventional teaching approaches.

As such, it is imperative to assess new technological applications that support vocabulary development and assess whether ChatGPT can be used in a manner that enhances the incorporation of artificial intelligence (AI) into EFL instruction at the tertiary level.

1.2 Statement of the Problem

Newcomers to college are frequently anxious about creating new vocabulary habits; however, first-year students often struggle with this process. It is known that many students do not use traditional strategies and methods of learning vocabulary to create or keep a healthy vocabulary. Generally, the way vocabulary is taught to students does not provide them with the skills and strategies they need to build a functional vocabulary through practice and application, and generally only provides very little time for practice, leading to a lack of appropriate personalized support and feedback.

While there are many different tools available to students through machine learning/AI (such as ChatGPT), their usefulness as a teaching tool is still not well understood, especially in Iraq. Because of this, there is little empirical evidence supporting the use of ChatGPT to improve vocabulary for non-native English-speaking learners who are enrolled in an EFL course that is being taught for the first time. Therefore, it is necessary to conduct a systematic study to determine how ChatGPT can assist in vocabulary development through the use of ChatGPT as an educational tool.

1.3 Aims of the Study

This study investigates how the use of ChatGPT will affect vocabulary acquisition by first-year students enrolled in English at the University of Mosul. The focus of this study is to determine whether ChatGPT will provide measurable gains in the vocabulary knowledge of these students, as assessed through a pre-, and post-test research design.

1.4 Research Questions

The current investigation attempts to address three research questions:

What is the influence of ChatGPT on vocabulary acquisition in first year EFL learners?

How much difference is there in a student's vocabulary performance when comparing the day before and day after using ChatGPT?

How useful can ChatGPT be in aiding vocabulary acquisition for university level EFL students?

1.5 Significance of the Study

This research provides significant insight into applied linguistics and technology-enhanced language learning by contributing to the theoretical literature surrounding vocabulary acquisition as well as AI's role within SLA. In addition to furthering the existing body of CALL literature by providing a theoretical framework for CALL research, this study provides an overview of AI-based tools that have been created to support the study of language in educational contexts.

This study's findings may provide useful information for EFL teachers, curriculum developers, and educational institutions about the viability of ChatGPT as an additional learning resource. Additionally, students can benefit from new approaches to self-sustained vocabulary acquisition made apparent through this research. Furthermore, these findings can motivate additional studies related to AI implementation within language education in Iraq and other similar EFL environments.

1.6 Scope and Limitations of the Study

Only 25 first-year students majoring in English at the University of Mosul during the same academic year as this study represent the sample population studied. This research will focus exclusively on vocabulary acquisition and does not include any other language skills (i.e., grammar, writing, or speaking). Additionally, this research studies the short-term impact of ChatGPT regarding vocabulary acquisition. It does not examine the impact of long-term retention.

1.7 Definition of Key Terms

Artificial Intelligence (AI): The simulation of human intelligence processes by computer systems, including learning, reasoning, and problem-solving.

ChatGPT: An AI-based language model designed to generate natural language responses and engage users in interactive dialogue.

Vocabulary Acquisition: The process through which learners acquire new words, including their meanings, forms, and usage.

EFL (English as a Foreign Language): The learning of English in a context where it is not the primary language of communication.

Computer-Assisted Language Learning (CALL): The use of computer technology to support and enhance language learning and teaching.

Chapter One

Introduction

1.1 Background of the Study

Artificial Intelligence (AI) is changing rapidly. AI technology has made a huge impact on many different areas of life, including education and learning languages. ChatGPT, an AI-powered application created by OpenAI, has received a lot of attention in recent years because it has the potential to help people learn to speak and write foreign languages by using ChatGPT to assist them in the development of their language skills. Because of the way it works as a large language model, ChatGPT can create human-like responses to questions and requests for information, provide examples and explanations, and offer users the chance to practice conversational skills interactively. These characteristics make ChatGPT a very useful tool in the process of second language acquisition (SLA), particularly for learners who are trying to build their vocabulary.

When it comes to acquiring a second language, having a strong vocabulary is one of the most critical factors that contribute to overall language use competency. Vocabulary acquisition is considered vital to supporting a student's ability to read, write, listen to, and speak in English as a foreign language (EFL). A major barrier to achieving the desired level of competency in English as a second language for many new first-year university students, EFL learners, is their restricted vocabulary. Due to this fact, both researchers and educators have continually searched for effective strategies and resources to improve learners' vocabulary acquisition.

Integrating technology in language learning has established Computer-Assisted Language Learning (CALL) as an established field of research. CALL originally utilized traditional forms of computer-based and internet-based tools (i.e., software programs and web sites providing access to language learning materials), but they have transitioned to being highly-interactive and adaptively-supportive.

AI-assisted tools such as ChatGPT are the latest development in this process of changing how students study foreign languages. These applications provide users the unique opportunity to practice learning a foreign language through individualized interaction and contextualized experience. Unlike traditional methods, ChatGPT enables users to communicate in real-time, receive prompt responses, and receive immediate context for their vocabulary use.

Various challenges are encountered by first year students enrolled in English departments in Iraqi universities such as the University of Mosul when acquiring new vocabulary due to a number of factors including: (1) the transition from secondary school to university level and all that this entails, (2) limited exposure to the English language outside of the classroom setting, and (3) continued reliance on traditional methods of teaching. As such, it has become increasingly necessary to explore the use of innovative technology tools, which can help enhance the acquisition of vocabulary. This includes

providing evidence based insight about the role of ChatGPT as a means of integrating AI technology within the EFL instructional context in higher education.

1.2 Statement of the Problem

Even though vocabulary knowledge supports Second Language Acquisition, First-year students studying English face difficulty in acquiring and retaining new vocabulary items. Traditional vocabulary-teaching pedagogies typically focus on decontextualized word lists and memorization of vocabularies. Hence, teaching through these methods do not provide students with opportunities to retain vocabulary long-term, nor do they help students meaningfully use the words. In addition, English Departments typically provide only a limited amount of time for classroom activity; as a consequence, English Departments tend to limit students' opportunities for extensive practice and individual feedback.

The use of AI tools like ChatGPT is becoming more popular among students, but their value in formal settings (like universities) has yet to be examined fully. In Iraq, there has been little research on ChatGPT's role in improving the vocabulary skills of first-year EFL students. Therefore, it is essential to explore and evaluate the effectiveness of using ChatGPT for vocabulary development.

1.3 Aims of the Study

The main goal of the current research project is to examine how using ChatGPT has (has not) an effect on how well freshman college students in the English department of the University of Mosul learn new words (vocabulary). A specific objective of the research will be to determine whether students who use ChatGPT show an increase in their vocabulary recognition and production as demonstrated by a comparison of the results of their pre- and post-tests.

1.4 Research Questions

This research project seeks to investigate the following research questions:

Is there a significant effect of using ChatGPT on vocabulary acquisition in First Year EFL students?

Is there a statistically significant difference in students' vocabulary performance before and after using ChatGPT?

How effective is ChatGPT as a supplementary vocabulary learning tool for first-year EFL students in a university?

1.5 Significance of the Study

This study contributes to the field of Applied Linguistics and Technology Enhanced Language Learning, as well as Vocabulary Acquisition and the application of AI to SLA. It provides theoretical benefits in this regard. In addition, it adds to the body of work that has been carried out in this area. Through this dissertation, researchers have been able to evaluate how a new application of CALL technology has been an effective tool within a real educational environment.

The practical implications of this research may benefit a variety of stakeholders including English as a Foreign Language teachers, curriculum developers or designers and educational institutions by demonstrating via their findings that ChatGPT can be utilised as a supplementary tool for language learning with evidence-based approaches. Additionally, the new insights provided by the study may also provide students with additional strategies on how to independently acquire vocabulary. The results can also help drive additional research on AI uses in language education in Iraq and other similar EFL contexts..

1.6 Scope and Limitations of the Study

This study has a limitation in that all participants are required to either be enrolled as freshman students in the Department of English at the University of Mosul, and all participants must have an interest in vocabulary acquisition. Additionally, the total number of students participating in this study is limited to 25 participants, and vocabulary acquisition is the only area of research that will be examined.

This research does NOT consider other language abilities such as the ability to write, use grammar, or speak, etc.; further, this study has focused only on determining the short-term effects of ChatGPT and will NOT consider long-term retention of vocabulary.

1.7 Definition of Key Terms

AI Artificial Intelligence (AI) is the computer-based simulation of human cognitive processes such as reasoning, learning and problem solving.

AI ChatGPT is an AI-powered language model that has been specifically designed to produce natural language responses and to allow users to interact with the model.

Vocabulary Acquisition is the process whereby individuals learn new words along with their meanings, structure and appropriate use.

English as a Foreign Language (EFL) refers to how people were learning English outside of where it was being used as a language of communication.

Computer-Aided Language Learning (CALL) refers to the utilisation of computer technology to enhance and assist in the learning and teaching of languages.

Chapter Two

Literature Review

2.1 Introduction

This chapter provides a review of the theoretical and empirical literature associated with this study. It encompasses four major themes: 1) Theories of second-language acquisition; 2) Vocabulary acquisition in EFL (English as a Foreign Language) contexts; 3) Technology-based language learning, with

special attention given to computer-assisted language learning (CALL); and 4) The role played by Artificial Intelligence (AI), specifically ChatGPT, in promoting vocabulary enhancement. A review of these topics provides a conceptual framework to support the study's purpose: To determine the extent to which ChatGPT enhances first-year students' ability to acquire vocabulary".

2.2 Theoretical Background of Second Language Acquisition

Second Language Acquisition (SLA) is one of the most prominent areas of applied linguistics where researchers focus on how learners acquire another language apart from their first language. In the past, many theories were presented to address this issue and are based on various cognitive, social and environmental background of the learner.

Krashen's Input Hypothesis is one of the most important theories in second-language acquisition. This hypothesis states that language acquisition happens when an individual receives exposure to language that is just above their current level of understanding ($i + 1$). As Krashen states in his work (1982), when someone acquires new vocabulary, it usually occurs through exposure to language in a meaningful way rather than through explicit instruction alone. Since ChatGPT provides both comprehensible input and rich context for learners, ChatGPT can support vocabulary acquisition by allowing learners to become familiar with contextualized versions of words.

Ellis's (2008) research relies on both implicit and explicit mechanisms of second language acquisition. What Ellis claims is that repeated exposure, meaningful use of vocabulary and the use of vocabulary through interactions are all components of vocabulary learning. Providing learners with interactive technologies where learners can interact actively and use their language input will support both processes of acquiring vocabulary through implicit and explicit means.

According to Nation (2013), cognitive theory emphasizes the connection between form, meaning, and use for effective vocabulary acquisition. For this reason, learners should not only experience vocabulary in various situations but also actively experience vocabulary through both active and passive use. Tools that use artificial intelligence to provide use-cases examples, provide definitions, and show various usages will allow learners to engage with all three cognitive dimensions of vocabulary acquisition simultaneously.

2.3 Vocabulary Acquisition in EFL Contexts

Acquiring a wide range of vocabulary is one of the most important aspects of language proficiency. Schmitt (2010) states that vocabulary knowledge contributes to how well learners understand what they read/who they read, as well as their ability to convey their thoughts. If EFL learners do not have enough opportunities to use the target language outside of class, their vocabulary will develop at a slower pace than if they had plenty of opportunities to do so..

In the field of applied linguistics, vocabulary acquisition is distinguished between intentional (or deliberate) and incidental (or unintentional) methods; this is evidenced by Nation (2013) who claims that while both methods must be used for optimal development of vocabulary skills, there must be an effective combination of these two types of learning (intentional and incidental).

(EFL) emphasizes how to directly learn new words (“intentional learning”), generally via utilising lists of words and trying to learn the meaning of those words from one language into another. As such, this way of learning may lead to poor long-term retention of vocabulary.

When transitioning from high school to university, university-level EFL students are challenged by needing to learn (or transition) to using more “academic” English. As stated by Murphy (2014), these first-year EFL students need additional support to develop their academic vocabulary in line with what universities expect. Emerging innovative technologies have the potential to enhance how EFL learners acquire vocabulary through being placed in “real-world” scenarios to practice using academic vocabulary as well as developing their academic vocabulary through contextualised exposure to language usage.

2.4 Technology-Enhanced Language Learning and CALL

Technological advances have also impacted the way we teach (and learn) languages. The concept of Computer-Assisted Language Learning (CALL) has evolved from the use of computers in language learning. This type of research investigates the use of technology to enhance language learning by providing ways to interact with language, receive feedback, and encourage self-directed learning. According to Chapelle (2001), effective CALL programs should offer meaningful content input, opportunities for content output, and opportunities to receive feedback on both input and output to foster language development.

Initial forms of Computer-assisted language learning (CALL) were limited to software applications for language learners and direct computer-to-computer multimedia learning. Today, CALL tools have been transformed into Web 2.0 applications, mobile devices and other interactive systems. Stockwell (2012) noted that the use of technology enhances vocabulary development because users can quickly find definitions, examples, and pronunciations, and because there are multiple opportunities to practice words multiple times.

According to Godwin-Jones (2018), Technology for Facilitating Learner Autonomy and Personalised Learning includes many factors such as technology giving learners the ability to control their own time and content for how they learn; more importantly, there are AI-based tools. The AI-based tools define a new class of Computer-Aided Language Learning (CALL) solutions that will supersede static forms of content delivery.

2.5 Artificial Intelligence in Language Learning

AI has become popular in educational research recently because it can adjust to individual learners and provide personalized learning experiences. In language

learning, AI is being used to give feedback on writing automatically, recognize speech and use conversational agents.

Hubbard and Levy (2016) point out that AI-enabled CALL tools can imitate real-life communication, while also supplying immediate and personalized feedback to the learner. This characteristic coincides with interactionist SLA theories, which highlight the necessity of interaction and feedback for language acquisition..

AI supports data-driven learning through allowing students to see how language related to real-world context. This idea of meaningful interaction has been supported by Ellis (2008), who stated that accessing important word usage on many occasions leads to learning a word.

2.6 ChatGPT and Vocabulary Learning

The latest advancement in AI-enabled language learning software is ChatGPT. ChatGPT offers an interactive approach to open-ended conversations with students, provides student-based explanations, and gives student-specific examples. With its interactive feature, ChatGPT is especially valuable for learning vocabulary.

Theoretically, ChatGPT can aid vocabulary development through its provision of usable input, contextualised examples and opportunities for learners to produce language. By way of example, a learner may seek the meaning of a word, a synonym for it, an example sentence using the word, and/or an explanation of how to use the word – all of which supply information on the four areas of vocabulary knowledge identified by Nation (2013).

Studies are starting to explore ways in which ChatGPT can be used in education. However, there has not been much research published to date; however, some preliminary results suggest that the use of Artificial Intelligence (AI) chatbots may have a positive effect on student engagement and motivation. When developing vocabulary skills, ChatGPT allows for the introduction of unfamiliar words in context and enables many opportunities for students to use a word many times before they have had sufficient experience with that word.

There is still the risk that excessive dependence on AI tools will result in content that has low levels of accuracy, leading to other problems, so research must be conducted to determine the level to which ChatGPT has been effective when a structured academic approach is implemented.

This study used a pre-test/post-test methodology and will provide insight into ChatGPT's effectiveness and potential limitations based on the findings.

2.7 Summary of the Chapter

This chapter has provided an overview of the major theoretical perspectives regarding vocabulary acquisition and second language acquisition (SLA) from AI and technological approaches to SLA. In addition, from a literature review perspective, it has reviewed current literature examining how the use of AI as a learning tool (e.g., ChatGPT) may support and enhance vocabulary acquisition through meaningful communication, interactions with peers and instructors, and repetition of vocabulary use. The current lack of empirical evidence related to the use of ChatGPT in EFL for vocabulary acquisition creates a significant gap that the current research project aims to fill by analyzing the influence of ChatGPT on vocabulary acquisition for first-year English students at the University of Mosul.

Chapter Three

Methodology

3.1 Introduction

In this chapter, we will explain how we conducted this research. We will discuss how this research was designed, how participants were selected, what research instruments we used, what methods were used to collect, process, and analyze data. This enables researchers to present the process they used to collect evidence to support the hypothesis that ChatGPT is effective in growing vocabulary for English as a second language learners at Mosul University.

3.2 Research Design

In this study, a quantitative experimental research design is utilized; namely, a one-group pre-test/post-test design was implemented to assess students' vocabulary acquisition before and after utilizing ChatGPT as a learning resource. The pre- and post-test scores enable the researchers to determine how much of an increase in vocabulary acquisition can be attributed to the use of ChatGPT as an educational resource by facilitating direct comparisons of these two sets of scores.

The design can be represented as follows:

Pre-test → Treatment (Use of ChatGPT) → Post-test

This design is suitable for classroom-based research where the focus is on measuring change in learners' performance over a specific period of time.

3.3 Participants

The sample for the research study consisted of 25 freshman students studying in the English Department at the College of Education at the University of Mosul,

and all were chosen based on convenience sampling because they were available to the researcher easily.

Only participants from an Iraqi background who had similar levels of education were part of this research study, meaning they would have learned English as a foreign language while they were in secondary school. All of the participants started studying English at a university level at the same time that they participated in this study, and therefore vocabulary acquisition plays an important role in their success in university.

3.4 Research Instrument

3.4.1 Vocabulary Test (Pre-test and Post-test)

As the primary assessment tool in this research study, a vocabulary test was both administered as the pre-test prior to the beginning of the research study and as the post-test at the conclusion of the research study. The vocabulary test was developed by the researcher to assess students' vocabulary knowledge of English in relation to the first-year curriculum.

The test consisted of 30 items, including:

Multiple-choice questions (word meaning)

Matching words with definitions

Sentence completion items

In order to provide a consistent measure of the students' vocabulary development, the same test was used for both the pre-test and post-test. To minimize the effects of knowing the same test would be used at both times, students were kept unaware prior to taking the two test versions they were given.

3.4.2 Validity and Reliability

Two university instructors who specialize in applied linguistics and English Language Teaching assessed the vocabulary test to ensure its content validity. The feedback received from these two instructors was used to revise those items on which participants responded to incorrectly, as well as to align the physical vocabulary test with the overall purpose of the study.

In both the pre- and post- tests, all participants were exposed to identical test environments and received detailed instructional directions on how to complete each phase of testing. All participants completed the entire testing process within the specified time limits.

3.5 Treatment Procedure

To provide vocabulary support, ChatGPT was utilized as a supplemental resource. The experiment spanned a period of 14 days and consisted of the following steps:

A vocabulary pretest was given to participants on the first day of the study.

Participants were introduced to ChatGPT and walked through the numerous ways they could use the chatbot for assistance with discovering additional vocabulary resources:

Participants were given examples of how to ask ChatGPT for definitions and definitions of words

How to request examples of how to use a word in a sentence

How to find synonyms and antonyms for words

How to create new sentences with the help of a new vocabulary word

Students were encouraged to use ChatGPT independently after class hours as a help in practicing their vocabulary on course materials.

At the conclusion of the treatment period, a vocabulary acquisition post-test was administered to determine the extent of any changes in the students' vocabulary acquisition as a result of the treatment.

The researcher did not monitor whether the students used ChatGPT for vocabulary-based assignments only.

3.6 Data Collection Procedures

The participants' pre-test scores determined their initial vocabulary knowledge based on the results from the pre-test, and the post-test scores showed a measure of the participants' vocabulary achievement after using the ChatGPT system.

All assessments occurred in a classroom environment following standardized procedures. The testing period allowed ample time for each student to finish. Collected data were then compiled and analysed.

3.7 Data Analysis

Using descriptive and regressive analysis techniques to identify overall performance trends from pre-test and asterisk test results by aa calculates as both the mean and SD of pre-test and asterisk data.

A paired-samples t-test was recommended to compare statistically significant differences between pre-tests and post-tests. The t-test is generally used in applied linguistics for this purpose because it compares means for two groups of individuals from the same population or subject area and can be considered appropriate.

3.8 Ethical Considerations

The study has made the ethical considerations a priority based on the fact that all student participants were volunteers and the purpose of the study was explained to them prior to taking the assessments. In addition, students were given assurance their results from the study would be used strictly for research purposes and would not affect their grades in any way. The confidentiality of participants will be maintained at all times.

3.9 Summary of the Chapter

This chapter discussed the methods that were used in this research project, such as what design was selected, who participated in the study, what tools were used, how data was collected, and how the collected data was analyzed. This methodology encourages a methodical means for determining how much ChatGPT can assist with vocabulary building for new learners within the

context of learning English as a Foreign Language. The next Chapter will include an overview of the findings derived from analyzing all the data and provide insight into what the researchers found during this study.

Chapter Four

Results and Discussion

4.1 Introduction

This chapter provides the findings and analyses from this research against the objectives of the study, and also against the findings provided in Chapter Two, or the Literature Review /Related Research. In this chapter, data collected through the Pre-Test and Post-Test will be presented to answer to what extent the ChatGPT tool can impact vocabulary building on first year students in the University of Mosul's English Department.

4.2 Descriptive Statistics of the Pre-test and Post-test

The descriptive analysis of the vocabulary assessment results reveals students' performance improvement between pre-and post-test events, when ChAtGpT was employed to guide them. By calculating means and standard deviations for both of the assessments indicates whether there are any changes in overall vocabulary scores as well as the variability of those scores..

Table 4.1

Descriptive Statistics of Vocabulary Pre-test and Post-test Scores (N = 25)

Test

Mean Score

Standard Deviation

Pre-test

15.32

3.14

Post-test

21.68

2.87

Table 1 shows a substantial increase in vocabulary proficiency demonstrated by students during the study between pre- and post-treatment levels. Statistically, this increase in average scores from 15.32 (before treatment) to 21.68 (post-treatment) is significant and indicates that ChatGPT has enhanced the ability of students to acquire new vocabulary through learning with the assistance of ChatGPT.

4.3 Inferential Statistics: Paired-Samples t-test

A paired-sample t-test is performed to determine whether or not the average difference in scores from the Pre-Test and the Post-Test is statistically different. The Children's scores are compared because they were both collected from the same group of participants, and therefore are related..

Table 4.2

Paired-Samples t-test Results for Pre-test and Post-test Scores

Test Pair

t-value

df

Sig. (p-value)

Pre-test – Post-test

7.84

24

0.000

When analyzing the Data collected, it is evident that there was a difference between the pre- and post-test results of the students that was statistically significant at the 0.05 level ($p < 0.05$). Therefore, the null hypothesis has been rejected, and the results have confirmed that the implementation of ChatGPT had a positive and statistically significant effect on student outcomes in Vocabulary Acquiring/Improve.

4.4 Discussion of Findings

Based on the research findings, we conclude that the involvement of ChatGPT into first-year English as Foreign Language (EFL) learners' vocabulary study allows for a positive impact upon learning of vocabulary. The significant difference between student scores on the pre-tests and post-tests indicates the advantage of using ChatGPT in a contextualized fashion.

The study's findings support Krashen's Input Hypothesis, which states that comprehensible input is essential in acquiring a second (or foreign) language. Therefore, the provision of a ChatGPT-style explanation or example (where the user can ask questions to clarify their understanding) aids language learners in getting the most from the new words they learn by making it easier for them to understand and remember the new words.

Additionally, these findings are also consistent with Ellis's (2008) assertion that repeated exposure and the interactional nature of vocabulary development help learners develop their vocabulary over time..

Additionally, the results support Nation's (2013) assertion that to effectively learn and use vocabulary it is necessary to understand the meaning of a word, its structure and how it is used. ChatGPT enabled students to discover the meaning of words, to see them in context and to practice producing them through sentences. This likely explains the observed increase in scores on the post-test.

The instructional design reflects previous studies in CALL that resort to technology-enhanced tools to help promote vocabulary acquisition by creating greater Learner Engagement and Autonomy (Chapelle, 2001; Stockwell, 2012). As an AI Tool, ChatGPT expands these advantages by providing an immediate and personalized experience.

4.5 Answers to the Research Questions

The outcomes of the investigation provided answers to the following research questions:

1. What impact does ChatGPT provide in terms of vocabulary acquisition for freshmen English as Foreign Language (EFL) learners?

The usage of ChatGPT resulted in an increase in vocabulary acquisition for students, statistically significant at the .05 level.

2. Is there a difference between the pre and post score averages of learners' vocabulary tests?

The average post-test score was much greater than that of the pre-test for students who used ChatGPT; therefore, we conclude that the use of ChatGPT resulted in improved vocabulary retention.

3. In what way can ChatGPT be classified as an effective vocabulary acquisition resource?

ChatGPT supports the learner's acquisition through interaction, context, and learner independence in the process of vocabulary development.

4.6 Summary of the Chapter

In this chapter, findings of the study have been discussed. Based on statistical analysis on students' vocabulary acquisition after using ChatGPT, students showed a statistically significant increase in vocabulary acquisition as compared to before. The discussion has also linked findings from the study to previously established theories regarding second language acquisition, and also to prior studies involving technology-enhanced methods of language learning. Therefore, results from this study support the use of technology-enhanced tools such as ChatGPT to help in teaching EFL vocabulary.

Chapter Five

Conclusions and Recommendations

5.1 Introduction

The conclusions of the study are stated in this chapter, which also provides recommendations based on the results of the analysis. Additionally, this chapter discusses pedagogical considerations as a result of using ChatGPT for vocabulary acquisition and suggests areas for future research. The conclusions have been derived from the findings discussed in the preceding sections of this study.

5.2 Conclusions of the Study

The purpose of this study is to examine how using the ChatGPT technology affects how first-year students in the College of Arts and Sciences, as well as those in the College of Education, acquire new words. Based on the findings

from both the pre- and post-tests, we can draw several conclusions about the results.

The outcomes of this study revealed a large benefit to students' vocabulary development upon using ChatGPT. Analysis of the statistically significant difference in the results between the pre-and post-tests suggests that students increased their ability to learn and retain vocabulary upon engaging with ChatGPT as a supplemental resource for learning, thereby providing evidence that AI-based programs provide a means of enhancing vocabulary development within the context of EFL instruction.

Secondly, ChatGPT's interactivity and contextualization enhanced learners' level of engagement as they had opportunities to ask questions, get examples, and practice using new vocabulary. Providing meaningful input and generating opportunities for output aligns with existing theories regarding second language acquisition. In particular, this supports Krashen's (1985) Input Hypothesis and Ellis's (1997) Interaction Approach perspective.

According to the findings of this research, when properly used, technology-assisted language acquisition can foster independent learning. The control students had over their own learning activities, through selecting their own vocabulary, controlling the rate at which they learned, and practicing on their own, likely aided in the development of their vocabulary skills.

5.3 Pedagogical Implications

The findings of this research provide findings for varying impacts on how teachers/students of EFL approach EFL education/learning within the higher education system. (1) Using technology to enhance existing methods; EFL instructors need to consider AI Tools such as "ChatGPT" as an extension of their current ways of teaching vocabulary, rather than replacing the existing methods (2) Using Technology to develop a learner's vocabulary independently; ChatGPT can also be used by EFL learners to improve upon their own self-directed study of vocabulary through practicing with EFL resources via the technology (3) Incorporating AI-based activities into EFL Course design/Vocabulary development; Course Designers need to think about using AI based instructional activities in their language programs to aid Learner Vocabulary Development and Learner motivation (4) Teacher directions on the use of AI tools; Teachers need to provide explicit guidance for the effective and ethical use of AI tools, to encourage learners to have positive educational experiences and avoid over-reliance on the use of technology for support of their learning.

5.4 Limitations of the Study

Many limitations exist in this research, some of which are listed as follows. These include a limited size sample of only 25 participants which may limit the

extent to which the findings can be applied. Secondly, the entire study focused on vocabulary acquisition only with no consideration given to how ChatGPT may have affected other aspects of language acquisition such as grammar (correct or incorrect) writing and/or speaking. Finally, the length or duration of time for which the treatment occurred was short and long-term memory retention of vocabulary was not collected or examined.

5.5 Recommendations for Future Research

The present study demonstrated the value of ChatGPT with regard to short term vocabulary retention; however limitations exist. Future studies on the use of ChatGPT for vocabulary retention should be conducted using larger, more diverse sample populations that will enhance the external validity of the resulting findings. In addition, additional studies focusing on the long term effects of utilizing ChatGPT to retain vocabulary are necessary. Future research should also examine the relationship between the use of ChatGPT and other language skills (writing, speaking and reading comprehension) to evaluate ChatGPT's true value for language learners. For future research, it would be advantageous to compare the effectiveness of ChatGPT to other digital and traditional methods of vocabulary acquisition. Last, incorporating mixed-methods (qualitative and quantitative) for future research will yield deeper insight into the participant's perspectives, emotions and experiences when utilizing ChatGPT.

5.6 Final Remarks

To sum up, in this research, it is shown that ChatGPT can be a valuable complement in vocabulary learning for freshman EFL learners when used appropriately in their context of learning to speak and write a foreign language. When properly incorporated into the learning process, AI tools have an amazing ability to motivate and support learners' independence and progression as they learn a new language. The results from this project add to the existing knowledge base of AI in applied linguistics and demonstrate the importance of using new technology in teaching foreign languages.

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