

T.C.
ISTANBUL AYDIN UNIVERSITY
INSTITUTE OF GRADUATE STUDIES



**A COMPARISON OF THE EFFECTS OF USING TWO
DIFFERENT WEB-BASED PLATFORMS ON LEARNING
VOCABULARY BY TURKISH EFL LEARNERS**

MASTER'S THESIS
Buse Pınar TURAN

Department of Foreign Languages Education
English Language Education Program

AUGUST, 2023

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(Y2112.021007)

Department of Foreign Languages Education
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AUGUST, 2023

APPROVAL PAGE

DECLARATION

I hereby declare with respect that the study “A Comparison of The Effects of Using Two Different Web-Based Platforms on Learning Vocabulary by Turkish EFL Learners”, which I submitted as a Master thesis, is written without any assistance in violation of scientific ethics and traditions in all the processes from the Project phase to the conclusion of the thesis and that the works I have benefited are from those shown in the References. (19/07/2023)

Buse Pınar TURAN

FOREWORD

I sincerely thank my esteemed thesis advisor Prof. Dr. Saeed MEHRPOUR for his sincerity and constant support during the writing phase of my thesis.

Special thanks also go to the respected jury members of my thesis for their insightful comments and suggestions.

Additionally, I would like to express my gratitude to my family for always being by my side, and I thank my dear friend Merve MERTÇE for never withholding her support.

To My One and Only Mother.

August, 2023

Buse Pınar TURAN

A COMPARISON OF THE EFFECTS OF USING TWO DIFFERENT WEB-BASED PLATFORMS ON LEARNING VOCABULARY BY TURKISH EFL LEARNERS

ABSTRACT

The primary objective of this research was to examine and compare the impacts of two distinct web-based platforms on the instruction of vocabulary to English as a Foreign Language (EFL) learners. This study was planned to be carried out in two classes (46 students). The participants were selected using convenience sampling. Data were collected from students attending the English preparatory program at the Bahcesehir University preparatory campus located in Kemerburgaz, Istanbul. They both took pre- and post-vocabulary achievement tests before and after a period of treatment. The findings of the study indicated that there was no statistically significant difference in the performances of the two groups during the pre-tests. However, after the students utilized the two online platforms and underwent post-tests, the results of the independent samples t-test ($p < .05$) revealed a significant difference between the two groups favoring Kahoot over Educaplay. In addition, exploring the probable effect of gender on vocabulary learning revealed that the male participants of the study had a better performance on measures of vocabulary learning compared to the female ones.

Keywords: Vocabulary Learning, Computer Assisted Language Learning (CALL), Computer Assisted Vocabulary Learning (CAVL).

İKİ FARKLI WEB TABANLI PLATFORM KULLANMANIN YABANCI DİL OLARAK İNGİLİZCE ÖĞRENENLER TARAFINDAN KELİME ÖĞRENİMİ ÜZERİNDEKİ ETKİLERİNİN KARŞILAŞTIRILMASI

ÖZET

Bu araştırmanın temel amacı, İngilizceyi Yabancı Dil olarak öğrenen öğrencilere yönelik kelime öğretimi üzerindeki iki farklı web tabanlı platformun etkilerini incelemek ve karşılaştırmaktır. Bu çalışma, Bahçeşehir Üniversitesi Kemerburgaz, İstanbul'daki hazırlık kampüsünde İngilizce hazırlık programına devam eden öğrencilerden (46 öğrenci) veri toplanarak gerçekleştirilmiştir. Katılımcılar, bir dönem işleminden önce ve sonra önce ve sonra kelime başarıları testlerine tabi tutuldu. Son olarak, aynı post-testler her iki sınıfa da uygulandı. Yapılan çalışmada öğrenciler uygunluk örnekleme kullanılarak seçilmiştir. Çalışmanın bulguları, ön testler sırasında iki grup arasında istatistiksel olarak anlamlı bir fark olmadığını gösterdi. Ancak, öğrenciler iki çevrimiçi platformu kullandıktan ve son testlere tabi tutulduktan sonra, bağımsız örneklem t-testi sonuçları ($p < .05$) Kahoot'un Educaplay'e göre lehine önemli bir fark olduğunu ortaya koydu. Ayrıca, cinsiyetin kelime öğrenme üzerinde muhtemel etkisini araştırırken, çalışmanın erkek katılımcıları, kelime öğrenme ölçümlerinde kadınlara göre daha iyi bir performans sergiledi.

Anahtar Kelimeler: Kelime Öğrenimi, Bilgisayar Destekli Dil Öğrenimi (CALL), Bilgisayar Destekli Kelime Öğrenimi (CAVL).

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I. INTRODUCTION

With the rise in the use of technology, the use of the internet has increased in every field. Learners may find vocabulary exercises uninteresting, especially those who have grown up in the digital era. Vocabulary learning can be considered uninteresting by many students studying English as a foreign language since they may find it necessary to memorize unfamiliar words and their spellings and are often required to complete numerous exercises. In fact, most learners find it difficult to engage in such rote vocabulary learning tasks.

It is widely acknowledged that technology has revolutionized various aspects of our lives, the global economy, and industries worldwide. It is fascinating to witness the significant influence of integrating technology into every facet of human existence, leading to enhanced efficiency, productivity, and the overall quality of our endeavors.

Because of the natural tendency of humans to forget, language learners' ability to remember words presents a challenge (Ebbihaus, 1913, as cited in Chen & Chung, 2019). There are, however, vocabulary acquisition practices that are specifically designed to aid in memorization and retention. Craik and Lockhart defined "short- and long-term memory" in 1972, which served as the foundation for these strategies. Schmitt expanded on this concept by creating the Vocabulary Learning Strategies Taxonomy, which classified strategies as 'discovery' or 'consolidation.' Memory methods were associated with linking a word to something the learner already knew in Schmitt's taxonomy (Oxford, 2001). At this point, the term "personalization" comes into play in the context of vocabulary learning. According to some researchers, words that are associated with meaningful narratives or stories are more likely to trigger memory retrieval (Kroneisen et al., 2013). Making links between knowledge and learners can elicit emotions (Thornbury, 2002), and learning words in context improves recall (Godwin-Jones, 2018; Herusatoto, 2011; Pearson et al., 2007;). It is also argued that the variety of encoding methods indicates that active participation and relevance to a specific context improve word learning and retention (Franciosi et al., 2016).

The role of language is crucial in the growth and progress of human society and culture. It serves as the primary tool for people to communicate and interact with each other, whether individually, in groups, or across nations. Over time, learning English has not only gained significant importance, but it has also become a necessary skill, making it a core subject at all levels of education (Yaacob et al., 2019).

Learning a new language requires having a strong grasp of its vocabulary, which is a fundamental and essential aspect of the process. A solid foundation in vocabulary is necessary for comprehending and communicating ideas effectively in the target language. In fact, every language skill relies heavily on knowledge of vocabulary and cannot be developed without it. This is a critical and indispensable component of language learning, as stated by Yaacob et al. (2019).

Learning a foreign language requires developing four fundamental skills. Typically, learners begin by acquiring listening and speaking skills, followed by reading and writing abilities. Regardless of the language skills, words play a central role in understanding and utilizing language. Hunt and Belglar (2005) assert that words constitute the "heart" of language comprehension and use, and the lexicon is essential in every language skill. Therefore, vocabulary is a critical and indispensable component in all aspects of language use. Schmitt (2010) observes that language learners prioritize dictionaries over grammar books. Furthermore, McCarthy (2001, cited in Fan, 2003, p. 222) notes that vocabulary presents the most significant challenge for language learners and is the largest component of language meaning.

Thanks to advances in information technology, web-based games have become a mainstream of leisure life globally during the last two decades. The growing popularity of computer gaming has been enabled by a variety of platform development, varied social situations, and expanded game capabilities (Bryce & Rutter 2003). Interactivity is one feature of instruction that can influence how students learn (Moreno & Mayer, 2005). In fact, interactive instructional activities enable students to activate existing knowledge in long-term memory and integrate it with to-be-learned information, allowing for meaningful learning (Moreno & Mayer, 2005; Wittrock, & Marks, 1978).

A. Statement of the Problem

Vocabulary has become an extremely important part of learning English education. The most important tool that educators value should be the one that provides efficient education most easily. Various educational games on different platforms can also play a leading role in education in this context.

In what follows, some studies conducted in this regard are reported ;

Ashraf et al. (2014) explored the effectiveness of online games in vocabulary learning among Iranian EFL students. Online games proved to be more helpful in terms of learning English vocabulary for the students. The study concluded that online games can be used effectively in English classrooms in general and in vocabulary teaching classes in particular. The results of these studies have generally shown that online games can be an effective tool for vocabulary acquisition, as they provide students with an engaging and interactive way to learn new words and phrases.

In still another research, Vasileiadou and Makrina (2017) examined the validity of the hypothesis that computer games are a particularly motivating way for young pupils to learn English vocabulary. The study's findings shed light on the effects of modern technology on language acquisition and their potential to motivate students to learn English.

Mehrpour and Ghayour (2017) investigated how educational computer games would affect Iranian children's ability to learn how to spell words in English. 66 young Iranian students studying English at the Iran Language Institute's (ILI) participated in this study. The analysis of the data obtained from the study showed that the experimental group's language learners were significantly impacted by the use of the instructional computer game. The results also showed that, in comparison to the learners in the control group, the experimental group's use of the game had a significant impact on the acquisition of English spelling skills in general, particularly in mastering the spelling of homophones and words with silent letters.

Al-Zangana (2018) investigated the influence of gender on five-year-old Iraqi preschool children's ability to learn new English vocabulary using educational games in an experimental group and without educational games in a control group. The results of the study, as analyzed using independent sample t-tests, showed that there was no significant difference in the learning of new English vocabulary between male and

female participants in either the experimental group or the control group. This suggests that gender does not have a significant impact on the ability of five-year-old Iraqi preschool children to learn new English vocabulary using educational games or without them.

Yousef and Abousamra (2022) in an article entitled "Game-based Virtual Learning Environments: Does Gender Matter?" examined the impact of gender on student engagement and learning outcomes in game-based virtual learning environments. The study found that there were no significant differences in engagement or learning outcomes between male and female students in these environments. However, the authors suggest that more research is needed to fully understand the impact of gender on learning in game-based virtual environments.

B. Purpose of the Study

The main aim of this study was to compare the effects of using two different web-based platforms on Turkish EFL learners' vocabulary teaching. As known, technology has brought about tremendous changes in our personal lives, the world economy, and industries all over the world. It is amazing to see how the infusion of technology into every aspect of human life has had a huge impact on increasing efficiency, productivity, and quality of what we do. The use of technology in our education has surely resulted in a variety of unique learning approaches and techniques that boost the overall efficiency and productivity of the educational processes. Aside from providing substantial benefits to learners, the development of new technology systems and software has supplied language instructors with the resources they need to increase students' dedication to the learning process. One subset of technology that has advanced with the advent of technology is educational games, which today play an important part in language learning.

C. Research Questions

Based on the objectives of the study, the following research questions are intended to be answered by the study:

RQ1: Is there any statistically significant difference in learners' vocabulary development when Kahoot and Educaplay are used?

RQ2: Is there any statistically significant difference between the male and female students' performance using either Kahoot or Educaplay?

Regarding the second research question, this study tried to find out whether there was a statistically significant difference between male and female students' performance in learning vocabulary through using the two web-based platforms or not. In what follows some studies related to the same variable, that is, gender are reviewed and reported.

D. Significance of the Study

In one research, Ahmed et al. (2022) investigated the effect of using Kahoot as a game-based learning tool on EFL learners' vocabulary recall and retention. The findings of this study can inform teachers that teaching with game-based learning tools may provide better results than traditional techniques. Furthermore, the ramifications of this study can inspire students to practice and learn English even when they are not in class.

As seen in these studies, the effect of Kahoot or other game-based technologies on vocabulary learning has already been examined in comparison with traditional methods of vocabulary learning/teaching; however, to the best of the knowledge of the present researcher, no study has so far been conducted on the effect of using two different online web-based platforms on vocabulary learning/teaching. This could also be one of the characteristics highlighting the significance of this study.

Another important aspect of the study is that it is entirely online. As a result, the study has been carried out smoothly without any disruptions during the administration of pre-tests, post-tests, and game applications.

Finally, the objective of this study is to shine new light on the ongoing discussions surrounding the utilization of technology in the context of online platforms, specifically focusing on the process of vocabulary learning by Turkish learners of English as a foreign language (EFL).

It is hoped that the conduction of this study revealed the probable differential effects of the two platforms on language learners' vocabulary learning.

E. Definitions

Vocabulary: According to the Cambridge Academic Content Dictionary (2017), it is "the entirety of the vocabulary employed by an individual or the complete set of words within a specific language or domain."

Computer Assisted Language Learning: CALL is a technique of teaching and studying foreign or second languages that use computers, computer-based tools, and information technology to transmit, reinforce, and assess the material being taught.

Computer Assisted Vocabulary Learning: Egbert (2005, p. 4) states that 'The process of students learning vocabulary in diverse circumstances while utilizing computer technology as a means, medium, and environment is referred to as "computer-assisted vocabulary learning."

II. LITERATURE REVIEW

A. What Does The Term "Vocabulary" Mean?

The subject of vocabulary has been examined and classified into several forms. One classification distinguishes between active and passive knowledge of vocabulary. Gruneberg and Sykes (1991) distinguished between these two types. Passive vocabulary refers to terms that students recognize but may struggle to pronounce, whereas active vocabulary refers to words that students have acquired and can use fluently. Hatch and Brown (1995) distinguished two categories of vocabulary: receptive vocabulary and productive vocabulary.

Receptive vocabulary refers to terms that learners understand when they are used in context but cannot use themselves. Stuart (2008) defines this as terminology that kids recognize while reading but do not use in their writing or speaking. Productive vocabulary, on the other hand, contains terms that students can understand, pronounce correctly, and use effectively in writing and speaking. This form of vocabulary requires the capacity to utilize the right words at the right time. According to Stuart (2008), learners may use the words to communicate their thoughts to others in productive vocabulary. In summary, receptive vocabulary refers to words that students comprehend but cannot use, whereas productive vocabulary refers to terms that students understand and can use effectively.

1. The Significance of Acquiring a Broad Knowledge of Vocabulary

A sufficient vocabulary is essential for foreign language learners because a restricted vocabulary might impede successful communication. Schmitt (2000) emphasizes the importance of developing lexical information in achieving communicative competence and learning a second language. Additionally, Nation (2001) describes a reciprocal relationship between vocabulary knowledge and language use, with vocabulary facilitating language use and vice versa. In other words, using language increases vocabulary knowledge, and increasing vocabulary knowledge makes language usage easier.

Several researchers believe that vocabulary is the most important component of learning a foreign language and that foreign language curricula should reflect this. According to Alqahtani (2015), knowing how to write grammatically sound sentences is useless if one lacks the vocabulary to explain one's ideas. While grammar is unquestionably crucial, language learners cannot communicate without a sufficient vocabulary. According to Maximo (2000), there are several reasons for the emphasis on vocabulary, including the fact that a large vocabulary is required for language mastery. Second language learners are aware of this, and they frequently carry dictionaries rather than grammar books, citing a lack of vocabulary as a major concern. Nonetheless, because of the open-endedness of the vocabulary system, vocabulary has been identified as the most major source of difficulties for language learners (Meara, 1980).

The importance of vocabulary may be seen both within and outside the classroom. Students with a broader vocabulary outperform those with a less vocabulary in academics. Researchers such as Gu (2003), Laufer and Nation (1997), Marion (2008), Maximo (2000), Nation (2001, 2005), Nation (2001), Read (2000, 2004) and Susanto (2016) have recognized that developing a large vocabulary is essential for effective foreign language use and plays an important role in producing complete written and spoken texts. According to Nation, the acquisition of vocabulary items is crucial to all language skills, including listening, speaking, reading, and writing (2001). Furthermore, Alqahtani (2015) maintains that having a large vocabulary is essential for successful foreign language use since language learners may not be able to employ the structures and functions they have acquired for meaningful communication without it. According to some research, the capacity to comprehend a second language is strongly dependent on vocabulary knowledge, and the lack of such knowledge is the most significant barrier for readers to overcome (e.g., Nation, 2001; Alqahtani, 2015).

2. Recognizing the Significance of Vocabulary in the Process of Learning a Language

Rubin and Thompson (1994) emphasize the crucial role of vocabulary in language learning, stating that it is essential to be familiar with a considerable number of words to effectively communicate in a foreign language. They further assert that

vocabulary learning lies at the core of achieving proficiency in a second language. Taylor (1992) also recognizes the significance of vocabulary in all linguistic skills and asserts that it is an integral part of language learning, irrespective of the language point or skill being taught or practiced in an English language class.

Without a doubt, having a large vocabulary assists EFL learners in overcoming difficulties in enhancing their language skills. According to Smith (1998), pupils who have a diverse vocabulary not only improve their language skills but also their cognitive capacities. Hence, as Meara (1980) suggests, vocabulary plays a critical role and should be prioritized in the process of learning and teaching a second language. Language learners recognize that even after moving from a beginner's level to an advanced one, language learners frequently experience considerable obstacles in acquiring and applying vocabulary.

Although the process of learning vocabulary is not fully understood, it is clear that adult second language learners do not acquire new words instantly. Rather, they gradually learn them through repeated exposure over a period of time. This gradual process of vocabulary acquisition can be seen in various ways. For instance, we may recognize and comprehend a word when we see or hear it, but may not be able to use it ourselves. This demonstrates that there are different levels of understanding a word. It is widely acknowledged that in order to be useful, a word must be comprehended. In order to communicate effectively, one must also understand how to use the spoken or written version of the term correctly. While some people feel that vocabulary knowledge is limited to these two elements, there is actually a wide range of possible knowledge that may be obtained about a word. Nation (1990, p. 31) asserts that in order to properly grasp a word, one needs also comprehend its multiple meanings, written and spoken forms, grammatical usage, common collocations, the suitable register for its use, linked words, and frequency of use.

3. Strategies for Acquiring Vocabulary in an ICALL (Intelligent Computer-Assisted Language Learning) Setting

The strategies that students utilize to better their language learning process are referred to as language learning strategies. Because they encourage active and self-directed learning, these strategies are critical for efficient language learning. According to Oxford (1990), students who apply suitable language learning

methodologies attain higher levels of competency and confidence. The majority of the extensive literature on the subject supports this viewpoint and highlights the importance of having a diversity of vocabulary learning strategies (VLSs). Knowing the many VLS choices can help instructors and curriculum developers create appropriate materials for classroom use.

Many research studies undertaken since 1995, including those by Sanaoui, Stoffer, Moir, Gu and Johnson, Lawson and Hogben, Schmitt, Porte, Kudo, Kojic-Sabo and Lightbown, Lin, Catalan, and Fan (1995), have provided useful insights into vocabulary learning processes and learner tactics.

Sanaoui (1995) distinguished two ways to adult learners' vocabulary development: structured learning and unstructured learning. Gu and Johnson (1996) suggested six different sorts of methods, including guessing, dictionary use, note-taking, rehearsal, encoding, and activation, as well as two extra factors: vocabulary learning beliefs and metacognitive regulation. Memory tactics included rehearsing and encoding, whereas cognitive strategies included guessing, clever use of dictionaries, and note-taking. Encoding tactics included approaches like association, visualization, and contextual encoding, whereas activation strategies focused on employing new words in diverse circumstances.

B. Vocabulary Learning Strategies (VLS)

Language learning strategies are a set of behaviors, methods, concepts, or cognitive processes that language learners employ to improve their understanding, retention, recall, and usage of knowledge when learning new vocabulary. According to Oxford (2003), learning strategies are tools for active, self-directed engagement, which is critical for establishing communicative competence. Language learning tactics that are used well can enhance self-confidence and drive better output. Individuals are said to be using learning techniques when they engage in actions and ideas to reach a learning goal (Chamot, 2004). According to Oxford, language learners use techniques to make learning more effective, quick, fluent, pleasurable, self-directed, and easily transferable to other situations. Furthermore, these tactics might assist learners in establishing specific learning objectives. Students use communicative methods to acquire and use language abilities. Using techniques also requires mental processes during the learning phase (Nunan, 1999). It is worth emphasizing that

language learning approaches should also be taken into account, as they may have commonalities with vocabulary acquisition strategies.

Learning strategies for vocabulary can be seen as a subset of overall learning strategies in acquiring a second language. The interest in these strategies arose during the 1970s when researchers aimed to identify traits that good language learners possessed (Naiman, Frohlich et al., 1975; cited in O'Malley and Chamot, 1990; Rubin, 1975). Learning strategies have been defined by O'Malley and Chamot as "unique thoughts or actions employed by individuals to aid their understanding, acquisition or retention of new information" (1990:1). Schmitt's definition of vocabulary learning strategies echoes this general idea. According to him quoting Rubin(1987), the act of learning is "[the] course through which data is attained, preserved, recollected and utilized"...thus any method impacting this inclusive process could be considered a strategy for vocabulary acquisition (1997:203).

Language learners encounter new vocabulary in the classroom from a variety of sources, including the language used by their teacher, their peers, and study materials. As a result, vocabulary acquisition has long been recognized as a key barrier to language learning progress. Hedge (2000) notes that, in addition to introducing new terms to learners, the major job of teachers is to encourage learners' independence. This can be accomplished by teaching effective vocabulary acquisition tactics, encouraging students to develop their unique approaches to learning new words, and empowering them to become self-sufficient in the process.

Nation's definition provided uncertainty regarding whether vocabulary acquisition occurs incidentally or purposely, a matter that has been extensively discussed in academic literature. Nation's description of vocabulary learning emphasizes its deliberate nature and is founded on the criteria necessary for a strategy to be deemed worthy of instruction by an educator. According to Nation's perspective, a successful approach should encompass various choices for selection, exhibit intricacy with multiple steps in the process of learning new words, and require knowledge and training for optimal outcomes, thereby improving both the efficiency of acquiring and using words (Nation, 2001:217).

Nation (1990) stated that the most effective way to learn vocabulary is through learners' own strategies. Nation recently proposed that vocabulary training be incorporated in vocabulary development programs in a recent publication. Schmitt and Schmitt (1995) suggested giving a variety of VLS to students and allowing them to select the ones they prefer. This strategy corresponds to the necessity for learners to expand their understanding of VLS.

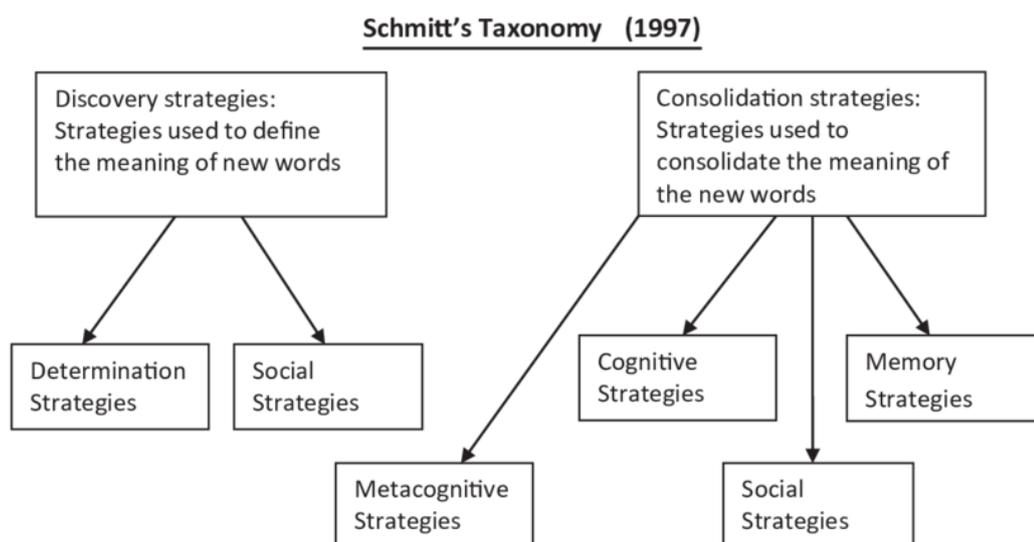


Figure 1 Schmitt's Taxonomy of VLS (adapted from Schmitt, 1997)

There are numerous strategies, as indicated by the classifications offered by several scholars, including Gu (2003), Nation (2001), Schmitt (1997) and Stoffer (1995) produced a detailed list of VLSs as well. While there are several definitions of VLSs, Gu's (2003) study uses Schmitt's (1997) classification, which splits VLSs into two basic types.

The first category is Discovery Strategies, which help learners discover new words, while the second category is Consolidation Strategies, which assist learners reinforce their understanding of previously encountered words.

Schmitt (1997) divided the strategies of vocabulary acquisition into five groups;

The first group is comprised of determination strategies, which are individualized learning techniques.

Social strategies comprise the second category in which learners acquire new words through interactions with others.

Memory strategies belong to the third group and involve associating newly acquired words with existing or previous knowledge for easy recall during mental processing.

Cognitive strategies make up the fourth type and focus more on cognitive processes rather than mechanical processes.

Finally, metacognitive strategies refer to monitoring one's progress, decision-making skills, and assessing overall development in acquiring new vocabulary according to Schmitt's classification system.

The study chose Schmitt's taxonomy as its foundation, which was inspired by Oxford's classification of language learning strategies by Yaacob et al (2019). This particular classification is known for being one of the most comprehensive when it comes to vocabulary acquisition strategies. Despite being developed with Japanese L2 learners in mind, Schmitt's five major strategies have proven useful in ESL/EFL settings and were used in this study involving Malaysian second language learners. The selection of Vocabulary Learning Strategies (VLSs) relies heavily on factors like proficiency level, motivation, and cultural background - all elements that can impact an individual's preference for certain learning approaches according to Schmitt (2000).

Gu and Johnsons (1996) categorized learning strategies into four main groups: metacognitive, cognitive, memory, and activation strategies.

Metacognitive Strategies include selective awareness and self-initiation techniques. L2 learners who use selective awareness strategies are aware of which words are crucial for them to learn and understand a passage adequately.

Cognitive Strategies, according to Gu and Johnsons' classification, involve guessing strategies, proficient use of dictionaries, and note-taking strategies. Students who use guessing strategies apply their prior knowledge and linguistic cues such as the grammatical structure of a sentence to deduce the meaning of a word.

According to Gu and Johnsons (1996), memory strategies can be categorized into two groups: rehearsal and encoding strategies. Rehearsal strategies involve word lists and repetition, while encoding strategies consist of association, imagery, visual, auditory, semantic, contextual encoding, and analyzing word structure through prefixes, stems, and suffixes.

Activation strategies, on the other hand, involve using newly acquired words in various contexts. For instance, learners may form sentences using the words they just learned. Figure 2 below provides a detailed overview of these categories and subcategories.

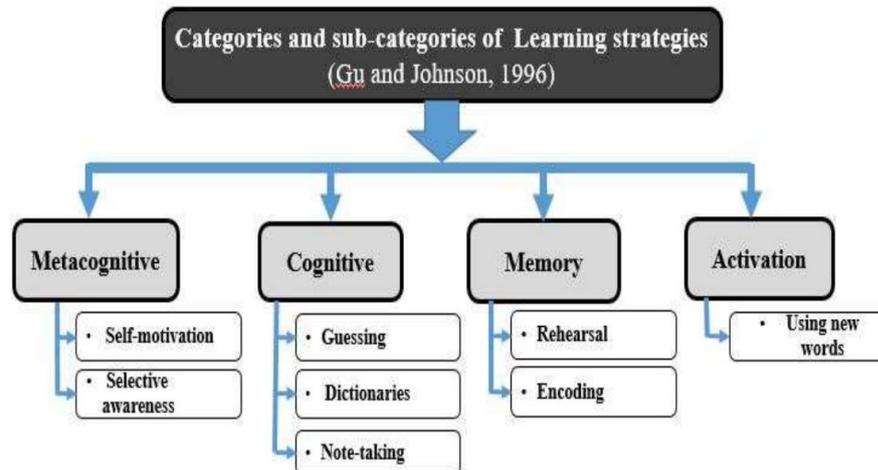


Figure 2 Categories and Sub-categories of Vocabulary Language Learning Strategies and Language Outcomes (adapted from Gu and Johnson, 1996, 643-679).

In some sources, it is possible to see Gu and Johnson's (1996) categorization of vocabulary learning strategies into the following categories:

These categories include Metacognitive Regulation, Guessing Strategies, Dictionary Strategies, Note-taking Strategies, Rehearsal Strategies, Encoding Strategies, and Activation Strategies.

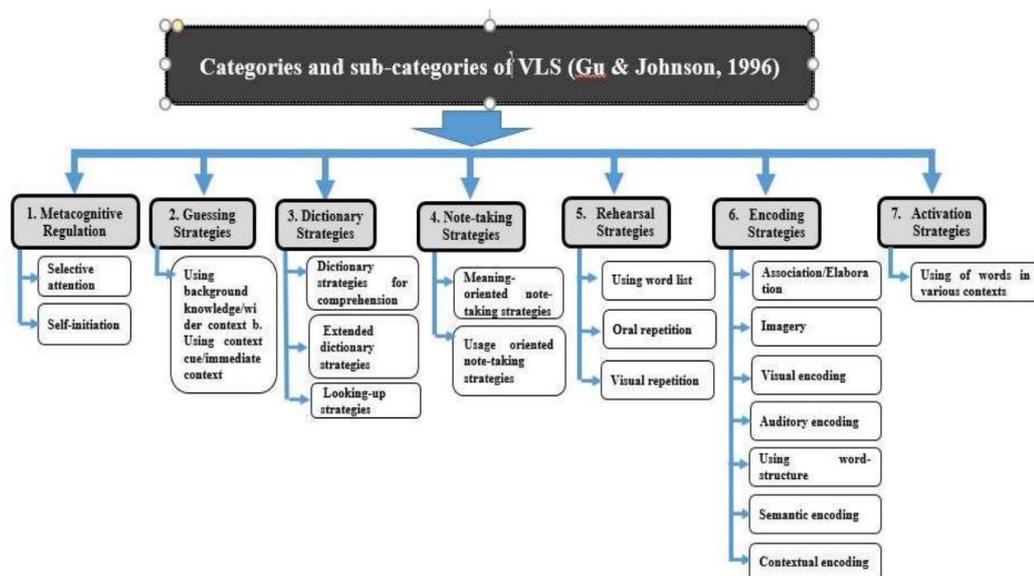


Figure 3. Categories and sub-categories of vocabulary learning strategies (adapted from Gu and Johnson, 1996, p.)

C. CALL (Computer-Assisted Language Learning)

1. An Introduction to CALL

CALL (Computer Assisted Language Learning) is the exploration and examination of computer applications in the context of language teaching and learning (Levy, 1997: 1). It is commonly defined as the use of computers to assist in the presentation of language materials. Another definition of CALL that recognizes its evolving nature is "any process in which a learner uses a computer to improve their language skills" (Beatty, 2003: 7). CALL was chosen as the agreed-upon term in 1983 Teachers of English to Speakers of Other Languages (TESOL) convention, which brought together all interested participants. The term is widely applied to "the field of technology and second language teaching and learning" (Chapelle, 2001: 3). CALL now includes "material design, technology, pedagogical theories, and instructional methods" (Beatty, 2003: 7).

2. A Brief History of CALL

CALL (Computer-Assisted Language Learning) is the application of technology to aid in teaching and learning a foreign or second language. It can take on various forms such as online communication tools, multimedia materials, and computer-based activities.

The use of CALL in teaching English can be advantageous for a number of reasons. Firstly, it can provide students with engaging and interactive learning experiences that can help them remain motivated and focused. Secondly, it can provide students with opportunities to practice their English language skills in various contexts such as reading, writing, listening, and speaking. Thirdly, CALL can provide students with immediate feedback on their performance enabling them to identify areas that require improvement.

There are different types of CALL activities that can be adapted to teach English including vocabulary quizzes, grammar exercises, speaking and writing practice exercises, as well as reading and listening comprehension activities. Common CALL tools include multimedia resources like videos and podcasts, online dictionaries, language learning apps, and virtual language exchanges.

When utilizing CALL to teach English, it is vital to select activities and tools that suit the students' level and needs. It is also important to integrate CALL activities with other teaching methods and materials, and to guide students.

3. The Three Phases of Development of CALL

The use of computers in language teaching has been implemented since the 1960s, as categorized by Warschauer & Healey (1998) into three different phases: behaviorist CALL, communicative CALL, and integrative CALL. Each phase was marked by unique technological advancements and pedagogical approaches. The earliest form of computer-assisted language learning during the 1960s and 1970s was known as behaviorist CALL. This technique emphasized repetitive drills based on a behavioral learning model that viewed the computer as an unwearied mechanical tutor. It mainly employed PLATO tutorial system for explicit grammar instruction and drills. The response to this approach led to Communicative CALL's development during the late 70s through early 80s.

According to Warschauer & Healey (1998), at both theoretical and pedagogical levels, advocates of communicative CALL discarded behaviorist CALL. Their focus was on utilizing language forms rather than concentrating solely on the forms themselves. Students were encouraged to generate their unique utterances instead of manipulating pre-made ones while grammar instruction took place implicitly. This approach aligns with cognitive theories that view learning as a creative process. Personal computers replaced mainframe computers during this era and allowed for increased individual work capacity, making popular software such as text reconstruction programs and simulations widely available.

The ultimate stage in computer-assisted language learning is called integrative CALL. The emergence of integrative CALL can be seen as a response to the shortcomings of communicative CALL, which was criticized for its disconnection and arbitrary use of technology leading to peripheral rather than fundamental elements in language learning. With an emphasis on authentic language usage within real-life settings, educators have shifted from cognitive approaches towards socio-cognitive methods. The goal is to fully integrate technology into language teaching while also combining various language skills effectively. Through multimedia-networked computers, students are presented with a multitude of tools including communication

channels, publishing platforms and access to relevant information resources alike (Lee, 2000).

As mentioned above, according to Warschauer & Healey (1998), CALL development can be divided into three stages: behavioral CALL, communicative CALL, and integrative CALL. Each stage depicts the evolution of various ways in which computers have been used in language learning/teaching and corresponds to a specific level of technology as well as a specific pedagogical approach. Table 2.1 by Warschauer (2004: 11) depicts the three stages of CALL from a pedagogical standpoint:

Table 1 The Three Stages of CALL (adopted from Warshauer, 2004)

The Three Stages of CALL (Warschauer, 2004: 11)

Stage	1960s-1970s: Behaviouristic CALL	1970s-1980s: Communicative CALL	1990s till the present: Integrative CALL
Technology	Mainframe	Pcs	Multimedia and Internet
English Teaching Paradigm	Grammar-Translation & Audio-Lingual	Communicative Language Teaching	Content-Based, ESP/EAP
View of Language	Structural (a formal structural system)	Cognitive (a mentally - constructed system)	Socio-cognitive (developed in social interaction)
Principal Use Of Computers	Drill and Practice	Communicative Exercises	Authentic Discourse
Principal Objective	Accuracy	And Fluency	And Agency

Table 1 by Warschauer (2004: 11) demonstrates a graphical representation of the CALL Timeline. The table depicts that the evolution of computer-assisted language learning closely parallels the evolution of language teaching over time. As technology progresses from mainframe computers to personal computers, computers' roles in the language classroom shift from being primarily a "tutor" to a "stimulative" resource and a "tool."

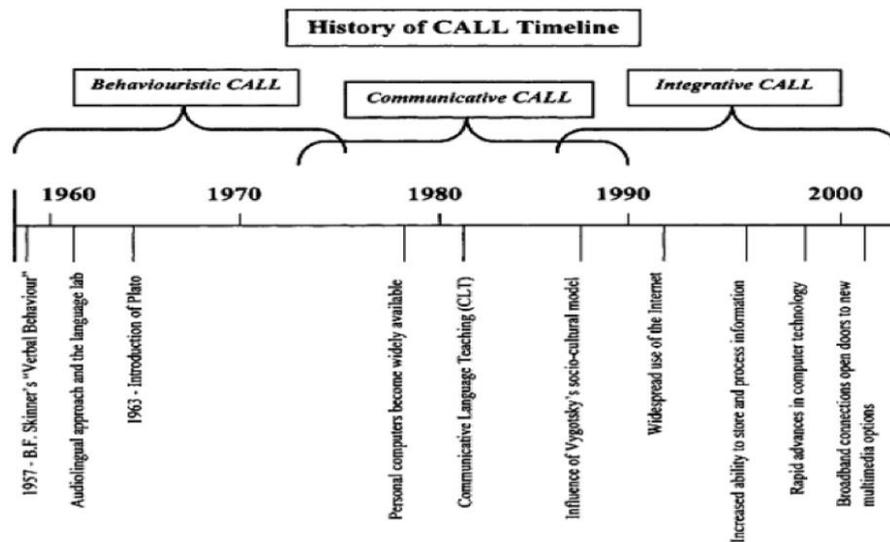


Figure 4 History of CALL Timeline (adapted from Kern & Warschauer, 2000)

The first stage of CALL, known as behavioristic CALL (Kern & Warschauer, 2000; Warschauer, 1996a), emerged in the 1960s and 1970s, at a time when the Audio-Lingual Method was widely used. This period also saw the start of the PLATO project. According to Fotos and Browne (2004), behavioristic CALL is based on the concept of the "computer as tutor" and consists primarily of repetitive language drills known as drill-and-practice exercises. Rather than traditional paper-based worksheets, behavioristic CALL provides learners with computer-based worksheets that are displayed on screens. The computer serves as a mechanical tutor, offering personalized instruction and feedback, allowing students to progress at their own pace, and freeing up class time for other activities (Warschauer & Kern, 2000). The popular PLATO tutorial system included numerous drills, grammatical explanations, and translation tests at various intervals (Ahmad et al., 1985).

The dominance of behaviorist methods in language learning was challenged in the late 1970s by communicative approaches that prioritized the use of language for meaningful communication rather than relying on formal instruction (Richards & Rodgers, 2001). During this time, a new approach known as Communicative CALL emerged, emphasizing communication and the use of content-focused software, with the belief that grammar could be taught implicitly.

Integrative CALL, the most recent phase of computer-assisted language learning, emerged in the mid-1990s (Fotos & Browne, 2004). Integrative CALL is based on multimedia computers and the Internet, with the goal of teaching language

skills holistically. It focuses on moving the learner's interaction away from computers and toward human interaction facilitated by the computer (Akcaolu, 2008).

A large collection of resources concerning computer-based language learning incorporate the use of various educational games. It is clear that computer games can introduce natural material to learners. Ellis et al. (2006) state that game-based activities allow learners to learn in their own way, enhance motivation by offering both visual and auditory input, and computer games focus on play rather than competition. Computer-assisted activities support learning effectively in meaningful contexts, so learners can evolve productively in their own learning (Ybarra & Green, 2003). In addition, computers address the needs of diverse learning styles (Kang & Dennis, 1995) (as cited in Ybarra & Green, 2003).

Holzinger, Nischelwitzer, and Meisenberger (2005) argue that teachers should make the education process more fruitful by allowing their students to make utmost use of technology. Computer games are one of the most important contemporary devices for learners to be integrated into the learning process since they enable learners to discover their own abilities and skills. With the help of instructional games, students' imagination and creativity can be enhanced and by playing computer games, students gain experience, develop a skill which lets them learn by searching and experiencing situational learning.

There were significant advancements in the 2000s that had a remarkable impact on various aspects of technology. These included widespread Internet use, the availability of fast and reasonably priced processors, the development of DVDs, video conferencing, and satellite systems. These advancements resulted in significant changes and the creation of new opportunities. One notable advancement was the increased availability of broadband, which enabled the delivery of audio and video materials via the internet, opening up a new world of possibilities. As computers became more common in schools, universities, and homes, facilitating educational and personal use, the emergence of blogs and podcasts had a profound effect, particularly on language educators and learners.

Computer-Assisted Language Learning (CALL) and web-based environments are now popular options for modern foreign language instruction, providing alternative methodologies. Students can improve their language skills quickly, study at their own

pace, and receive immediate feedback with the help of CALL. "CALL empowers students to take control of their own learning, construct meaning, and assess and monitor their own performance," writes Hanson-Smith (1997: 7).

4. CALL Based Studies

In Moreno and Mayer's study, it was discovered that an agent-based multimedia game that integrates CALL technology can be a beneficial method for teaching English to young learners. By utilizing animations, images, and audio, the game provides an interactive and captivating learning experience that allows students to enhance their English skills through various forms of input. The research team found that when used with proper direction and chances for reflection, CALL technology in the game can improve language learning results. The article emphasizes the potential of CALL technology as a valuable instrument for teaching and learning languages.

In Bagheri et al. (2012)'s study, 61 Iranian women studying English as a foreign language (EFL) who were chosen by purposive sampling participated in the study. Using random assignment, they were split into two groups: CALL users (n = 32) and non-CALL users (n = 29). In the study, a posttest control group design was employed. Despite the fact that both methods appeared to be successful, the results of the t-tests showed that there was no discernible difference in vocabulary scores between CALL users and non-users in either short-term or long-term learning.

D. Computer-Assisted Vocabulary Learning (CAVL)

Computer-assisted vocabulary learning involves a number of processes, including presenting, applying, and assigning new words. According to Mayer and Sims (1994), a multimedia learning atmosphere helps learners enrich their visual representation of new words and their verbal form. This atmosphere also helps learners develop knowledge of new words and increases the speed of word recognition.

E. Introduction of Kahoot and Educaplay

The first game used in the present study is Kahoot which is actually a game-based learning platform that is used as an instructional resource in schools and colleges. Another important web-based game that the researcher employed is Educaplay.

According to Dellos (2015) Kahoot! is a method for student involvement that includes interactive quizzes, conversations, and surveys that may be pre-made or produced on the go. It allows students to participate without requiring a Kahoot! account because they may access the activities from any device with a web browser (e.g., iPad, Android smartphone, Chromebook). Teachers, on the other hand, require an account to design quizzes. The procedure of creating a quiz, debate, or survey is straightforward and common across all options. The study utilized a quiz as an example to describe the setup process.

The teacher must first log in to their account and browse to the "Create new Kahoot!" section to begin making a quiz. They can select from a variety of options in this part, such as a quiz, conversation, or survey. According to the International Journal of Instructional Technology and Distance Learning, by selecting the quiz option, which is indicated by a question mark, the teacher will be invited to input a name for the quiz. After selecting an appropriate name, the teacher can proceed by clicking "Go!" and will be given the chance to create the first quiz question.

There are various possibilities (as cited in Dellos, 2015) for creating quiz questions that can increase student participation. These possibilities include the ability to include films, graphics, and music into the quiz, either to stimulate students' thinking or to create an energetic atmosphere. There is, for example, a drag-and-drop capability that allows the incorporation of images. An image can also be uploaded by selecting the "choose file" option and selecting a file from the device. A URL address must be put in the designated section that requires a website ID to include a YouTube video within a specific inquiry. Furthermore, you can define the exact period in seconds to play only a portion of the movie.

The questions in the Kahoot game used in this study were individually prepared by the instructor, and multiple-choice quizzes were created by adding unit-specific words each week. The steps described above were followed without any issues.

According to the findings of Graça et al. (2021)'s study, using the Educaplay platform for vertical and horizontal articulation in the didactic process indicated a wide range of features. By highlighting key ideas within themes of globalization and encouraging skills, beliefs, and attitudes that are advantageous to the 21st-century student profile, the platform made it easier to expand curriculum-related information.

What precisely is Educaplay, then? It is an online tool or platform that enables educators to produce engaging and expertly made educational games or aids. The platform replaces the need for numerous software programs and is free to use. Juan Diego Polo, a graduate of UPC (Barcelona) with a background in telecommunications engineering, created Educaplay. From 1998 through 2005, he had positions as an engineer, professor, and analyst before starting work on www.whatsnew.com, the predecessor to Educaplay.

Teachers simply need to register once in order to create different kinds of free educational games on Educaplay (such as tests, matching activities, crossword puzzles, etc.). After that, they can play similar games with their pupils and see what happens. As a platform for education, Educaplay integrates tools with a variety of functions, such as crossword puzzles, multiple-choice tests, letter soup, and other games. These tasks can be completed by users in the same virtual setting. The activities that are offered on Educaplay are shown in the Table 2 below along with their corresponding objectives.

Table 2 Educaplay Platform Functionalities (adapted from Graça et al., 2021)

Activity	Functionality(s)
1) Riddles	Find a word from a series of clues.
2) Crucigram	Complete a word, through clues that can be: written, sound or image.
3) Letter Soup	Find words in the soup of letters the words requested
4) Complete texts	Add the missing words in a paragraph or sentence.
5) Dialogue	Cancel the audio of one or more characters so that the user can assume the role of that character. There are two playback modes: continuous playback and phrase by phrase playback.

Table 2 Educaplay Platform Functionalities (adapted from Graça et al., 2021) (cont.)

6) Dictations	Write on the platform the text to be heard in the dictation.
7) Sort letters	Sort letters to form a word or phrase.
8) Linking elements	Review concepts by associating several words or images
9) Create test questionnaire	Build questions adapted to the concepts you want to evaluate.
10) Vídeoquiz	Put questions on the video, you can resort to Youtube

1. Experimental Studies Conducted on the Use of Kahoot and Educaplay

As background to the present study, Quiroz et al. (2021) conducted a study on improving English vocabulary learning through Kahoot. The results of the study demonstrated an improvement in the language learners' English vocabulary knowledge using Kahoot with a substantial variation and a medium effect size.

Ahmed and Sayed et al's. study (2022) was conducted at the Pars English Language Institute in Ahvaz, in the Iranian province of Khuzestan. They studied the effects of using Kahoot as a game-based learning tool on Iranian EFL learners' vocabulary recall and retention in another study conducted in a related setting. The participants included fifty intermediate-level Iranian students. These volunteers were randomly divided into two groups of equal size: the experimental group and the control group. The findings of the paired samples and independent samples t-tests showed that the performance of the experimental group was substantially different from that of the control group in both the immediate and delayed posttests. This study suggests that employing game-based learning tools for training, such as Kahoot, can result in better results than using conventional teaching methods. The results of the study showed that games created with contemporary technologies can aid in learning.

According to Reynolds et al. (2021), there is a quasi-experimental study and in this study, vocabulary learning and motivation are examined in relation to a specific application called Kahoot! at a medium-sized institution in South Korea. Throughout

the study, improved vocabulary acquisition was seen in both the experimental group using Kahoot! and the control group using conventional methods. However, there was no discernible difference between the two groups in terms of vocabulary learning. However, compared to the control group, the Kahoot! group showed a noticeably greater rise in motivation.

Similarly, Medina and Hurtado (2017) investigated the impact of Kahoot! on students' performance in an English class. Using a quasi-experimental design, the efficiency of this tool in the vocabulary learning process in an English language school was assessed over time. The study's findings are consistent with past research that found employing Kahoot! boosted student involvement and engagement. The results also give additional proof that Kahoot! increased motivation and facilitated vocabulary acquisition for upcoming exams.

In another research, Masoud et al. (2020) found out how using Kahoot, an online learning tool, affected secondary school students learning English as a foreign language's (EFL) vocabulary acquisition. The study, which lasted three weeks, examined the effects of using the online learning tool Kahoot on secondary school pupils learning English as a foreign language (EFL) in terms of vocabulary acquisition. The results suggest that Kahoot helped the experimental group's vocabulary learning, and this conclusion is supported by the data.

In addition, the study by Maoud, Aldahami, and Aljehani (2020) looked at how using the web-based learning platform Kahoot might enhance secondary school students' EFL students' vocabulary learning. The primary goal of the study was to ascertain how Kahoot use will affect the vocabulary development of EFL secondary students. The participants in the study were a sample of 106 female secondary school students in the second grade from the eighth and twenty-third Secondary Schools in the city of Al-Madinah Al-Munawarah. The researchers developed pre- and post-vocabulary achievement assessments to assess the participants' vocabulary learning development before and after the study. According to the findings, Kahoot improved vocabulary learning for the experimental group.

Köse, Yimen, and Mede (2016) also attempted to find out how Turkish EFL students enrolled in a preparatory course at a private school in Istanbul, Turkey, were impacted by the online vocabulary-building tool Quizlet. The research involved 43

preparatory students with pre-intermediate and intermediate skill levels throughout the course of a 7-week training program. The findings demonstrated that most students found the online tool to be helpful, particularly when learning new vocabulary because it included L2 definitions, synonyms, and pronunciation practice for the target terms.

Additionally, Chen, Chen, and Yang developed an app called EVLAPP-SRLM for learning English vocabulary as part of a 2019 study. The self-regulated learning component of this software was created to enhance students' ability to control their behavior, which in turn would enhance their performance and motivation in a mobile learning environment. The results of the study showed that, in terms of learning performance and motivation, pupils in the experimental group did significantly better than those in the control group. As demonstrated in this study, employing an online app can enhance student performance.

Kabooha and Elyas conducted a study in 2018 to ascertain the effects of YouTube integration on vocabulary learning and retention among Saudi female students pursuing English as a foreign language at King Abdul Aziz University. The study also looked into how teachers and students felt about using YouTube to help kids learn new words. According to the study's findings, the group that saw the YouTube videos fared better on the post-test than the group that wasn't exposed to the movies. The results demonstrated that watching YouTube videos significantly impacted the students' vocabulary growth. The survey also revealed that the respondents had favorable opinions about using YouTube for educational purposes. The linguistic proficiency of the subjects also showed a discernible improvement.

The primary objective of the study conducted by Hung et al. (2018) was to conduct a thorough assessment (meta-analysis) of the empirical data pertaining to the use and effects of digital games in language education from 2007 to 2016. To enhance the field of digital game-based language learning (DGBLL), this study set out to do just that. A thorough review was conducted on fifty carefully chosen studies. The results highlighted the wide range of traits present in this area and demonstrated the usually positive effects of employing digital games to enhance language and literacy training for both native speakers and non-native speakers. Along with analyses of their significance for future research projects, this review also identified a number of this domain's prospective but understudied areas.

In Gallegos et al. (2021)'s study, in the first, second, and third years of the Computer Science Baccalaureate program at the Ismael Pérez Pazmio School in Machala City, 63 students and 15 teachers in all participated. The analysis of prior experiences brought to light the value of technology in the teaching and learning process as well as the advantages of utilizing the EducaPlay tool to improve it. The evaluation and analysis of the outcomes seen after Educaplay was implemented in the Computer Science program at Ismael Pérez Pazmio High School provided evidence of its efficacy.

Al-Zangana (2018) investigated the influence of gender on five-year-old Iraqi preschool children's ability to learn new English vocabulary using educational games in an experimental group and without educational games in a control group. The results of the study, as analyzed using independent sample t-tests, showed that there was no significant difference in the learning of new English vocabulary between male and female participants in either the experimental group or the control group. This suggests that gender does not have a significant impact on the ability of five-year-old Iraqi preschool children to learn new English vocabulary using educational games or without them.

Additionally, two topics were investigated in Kayaalt's (2018) study: (a) the connection between vocabulary acquisition and online games; and (b) any potential effects of gender on vocabulary learning via online games. The study's conclusions showed that online games are a more efficient way to teach vocabulary in language instruction than traditional rote learning methods. On the other side, a person's level of achievement is influenced by their gender. Men students are better at learning vocabulary through online games as compared to female students.

Yousef and Abousamra (2022) in an article entitled "Game-based Virtual Learning Environments: Does Gender Matter?" examined the impact of gender on student engagement and learning outcomes in game-based virtual learning environments. The study found that there were no significant differences in engagement or learning outcomes between male and female students in these environments. However, the authors suggest that more research is needed to fully understand the impact of gender on learning in game-based virtual environment.

In order to better understand how computer phobia affects female college students' perceptions of Web 2.0 learning applications in the context of the gender digital gap, Huang et al. (2013) conducted a survey. Using the Unified Theory of Acceptance and Use of Technology (UTAUT), 432 college students' perception scores on "Web 2.0 for learning" were gathered for the study. According to the study, men and women had dramatically different opinions on six Web 2.0 applications: a blog, wiki, social networking tool, online video sharing tool, online game, and immersive virtual environment. Women generally displayed higher levels of anxiety when using Web 2.0 applications than males did. However, this distinction was not present in social networking software or online video-sharing websites.

Virtual Learning Environments (VLEs) with a game foundation are frequently employed in educational contexts for teaching and communication, claim Yousof & Abousamra (2022). However, there hasn't been much research specifically looking at how gender differences in game-based VLEs assist students. They investigated how gender variations in effective VLE use are portrayed in order to address this issue. In terms of the objective component of culture that was supplied in the game-based virtual learning environment, ladies performed better than males on the intercultural communication (ICC) test. This demonstrates that women who use a VLE are better able to comprehend, process, and apply the knowledge they learn.

Chiang's study (2020) focused on a platform for online gaming that also had a gender variable. This study's major objective was to find out how Chinese students in a college English as a Foreign Language (EFL) class in Taiwan felt about utilizing Kahoot!, a mobile game-based learning software. The study's conclusions showed that there were no appreciable distinctions between male and female students' opinions of Kahoot! Despite the majority of participants had positive opinions about Kahoot!'s use in the EFL reading class, several participants expressed doubts about its usefulness as an evaluation tool.

Demiröz and Turkmez (2020) examined the perspectives and attitudes of English as a Foreign Language (EFL) instructors who use computer-assisted language learning (CALL) in their classroom vs those who do not in a different study. The survey method was utilized to collect data for this investigation. According to the findings, EFL instructors at Turkish higher education institutions are eager to adopt CALL in all of their English lectures, including prerequisite lessons and mandatory general English

courses. Particularly male professors had more favorable opinions toward using CALL programs, and they did so more efficiently.

The scarcity of experimental studies conducted using Educaplay underscores the significance of this research.

III. METHODOLOGY

The goal of this chapter is to describe the methodology used in the current study, taking into account the research design, setting, participants, and limitations. The chapter also explores the methods used for data collection, processing, and analysis during the course of the study.

A. Research Design

The aim of the first research question is to compare the effects of two different web-based platforms on EFL learners' vocabulary teaching.

In relation to the second research question, this study aims to determine whether there is a statistically significant difference the performance of male and female students in vocabulary learning when utilizing the two web-based platforms.

The study design used in the research was quantitative to find out the student's pre and post tests results. The results were compared using Statistical Package for the Social Sciences (SPSS).

B. Setting and Participants

A total of 46 preparatory students participated in this study. Following convenience sampling procedures, the participants were selected based on their availability. Each student accessed the games using the shared link screen simultaneously, though it was done synchronously for all students. The students were receiving education at the preparatory campus of Bahçeşehir University in Kemerburgaz. The study included 28 female and 18 male students within the age range of 18-21. Since they were preparatory students, their majors differed from each other. In Bahçeşehir University Preparatory School, due to the pandemic, hybrid education was conducted, but after the earthquake, all activities and tests were switched to fully online education. Despite this transition, there were no disruptions in the

implementation of the tasks, and everything was followed precisely. In this regard, no negative feedback was received from the students.

C. Procedures

This part includes a detailed description of the tools and the methods to collect data, the procedures used for data analysis, and a discussion of the study's reliability and validity.

1. Data Collection Instruments

In line with the purpose of the study, a quantitative data collection instrument was used. Every week, students were given two identical tests, one to assess their awareness of the word before learning it. This is referred to as a pre-test. The other test was administered after students were supported with either Kahoot or Educaplay, aiming to examine the effectiveness of each platforms.

2. Pre and Post Tests

In the study conducted on B2 students at Bahçeşehir University Preparatory Department, the students used the Bahçeşehir University School of Foreign Languages 2022-2023 B2 Writing Booklet, as well as weekly booklets containing materials from the university. The booklet was used to improve the writing skills, while the weekly materials were used to enhance vocabulary, reading, listening, and speaking. B2 students learned 10-15 new words each week, and these words were included in the pre and post tests. The questions for these tests were taken from the weekly main packs of Bahçeşehir University, and students were asked to answer them. The pre and post tests were shared with the students through the 'Nearpod' application. The tests were given to the students throughout all 6 weeks, with a new unit being covered each week. The tests were conducted in the form of multiple choices activities.

D. Data Collection Procedures

The data collection process began on February 27th and lasted for 6 weeks. As mentioned before, each level advancement module at Bahçeşehir University Preparatory School lasts for 7 weeks. During these weeks, new vocabulary is not

introduced only in the 7th week, so the work continued for the first 6 weeks. The study was concluded at the end of the 7th week.

The first week of the study started with the topic of the 'Education' unit. A pre-test was conducted on Nearpod before giving students 15 words related to this topic. Students were asked to scan the given link or QR code on a different device or on a different tab on the same device. It was important not to provide any prior information about the words. In this case, both classes acted as they should, with their respective teachers. After students entered and saved their answers, the teacher began the word instruction. The recorded responses were downloaded from Nearpod.

LAST NAME	TOPLAM Katılım	QUIZ Puanı	TIME TO CLIMB Puanı
Class Averages	47%	63%	13%
Abdulrahman IP: 78.163.171.34	50%	27%	—
çakır, Mehmet akif Takma Ad: Cakirwrc IP: 176.232.14.124	23%	33%	—
Erat, Melih Takma Ad: Erat IP: 78.190.57.161	50%	47%	—

Figure 5 Week 1 Student's Results

The image shows a screenshot of the Nearpod interface during a quiz. The interface is in Turkish and displays four questions (Soru 1 to Soru 4) out of 15. Each question is presented on a slide with a blue header and a white content area. The questions are multiple-choice, and the options are listed in a vertical list. The interface includes navigation buttons like 'Geri' (Back), 'Yanıt seçin' (Select answer), and 'Sonraki' (Next). There are also 'Skip Quiz' buttons on the right side of each slide. The top bar shows the Nearpod logo, a menu, the code 'KOD: GWEZA', and the user's role 'Öğrenci' (Student) and 'Öğretmen' (Teacher).

Soru 1 / 15
Subjects like robotics and microelectronics are on the for a group of highly intelligent ten-year old children.

- A. curriculum
- B. hand in
- C. truancy
- D. monitor

Soru 2 / 15
English is for all students, but art and music are optional.

- A. monitor
- B. compulsory
- C. drop out of
- D. observation

Soru 3 / 15
In this poor area, is a problem that teachers, parents and the government are working hard to fight.

- A. observation
- B. truancy
- C. pick on
- D. drop out of

Soru 4 / 15
Just leave me alone, will you? Why don't you go and someone your own size?

- A. pick on
- B. drop out of
- C. hand in
- D. observation

Figure 6 Nearpod, Pre and Post Test Week 1

During the same week, after teaching the target words, the class that was supported by Kahoot was reinforced with a Kahoot game, and the class that used Educaplay was reinforced with an Educaplay game.

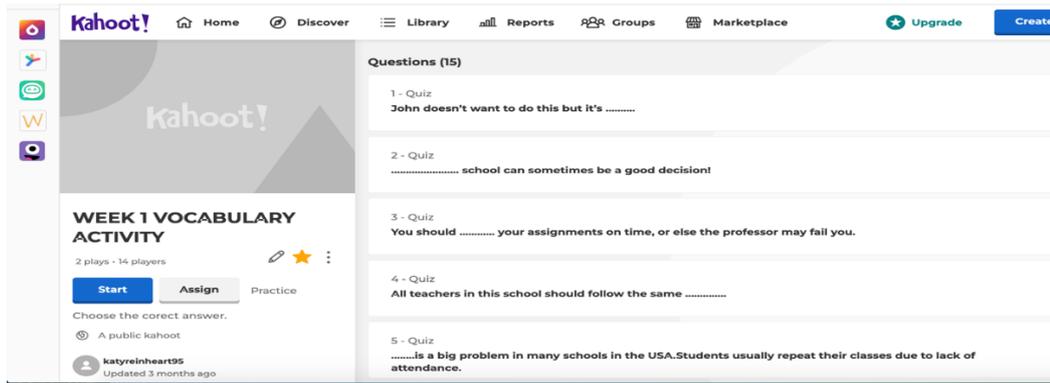


Figure 7 Kahoot for Week 1

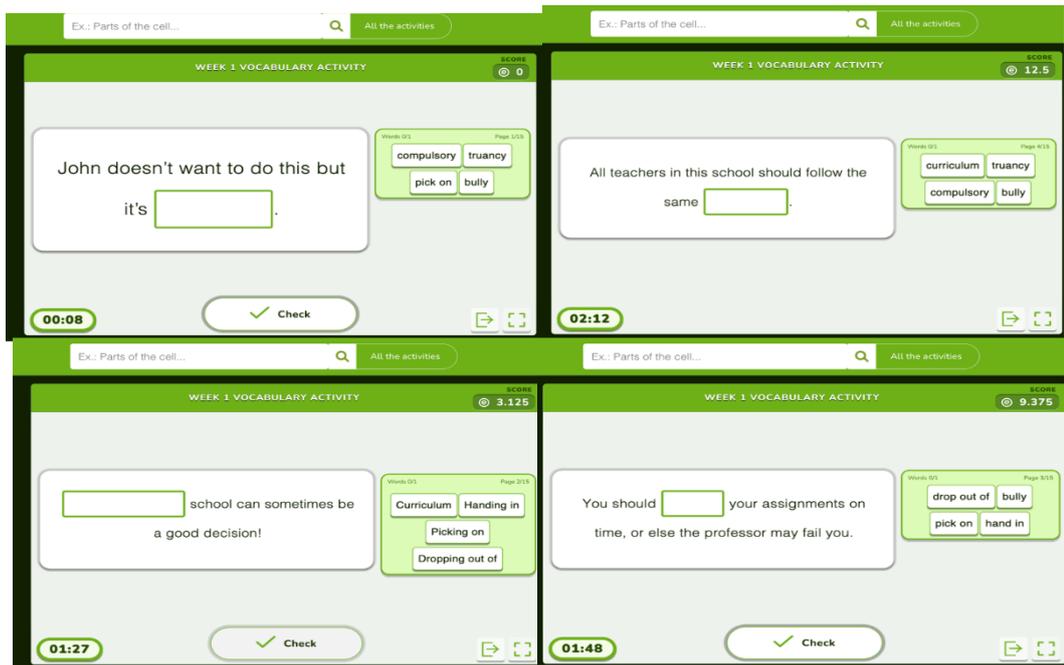


Figure 8 Educaplay for Week 1

On the final day of the first week, a post-test for Unit 1 was administered to both classes by providing them with QR codes or links via Nearpod. After completing their tests, the students' responses were once again recorded using the same application.

In the second week, the students again took pre-tests in the two separate classes. The unit for the second week was also Education. Before teaching different target words related to Education, a pre-test was conducted. No prior preparation was given to the students before the pre-test. The students' similarity with the words was measured before the lesson began. The instructor conducting the study created activities and materials specifically for the pre and post-tests by multiple choices through Nearpod, focusing on the Education unit. The students were asked to read and answer the tests, and those who finished the test submitted their answers and waited

for their classmates to complete. The answers were downloaded by the teacher through Nearpod on a weekly basis.

The image shows four sequential screenshots of a Nearpod quiz interface. Each question is presented in a white box with a blue header and footer. The questions are as follows:

- Soru 1 / 15:** "People from these minority groups must have of opportunity." Options: A. equality, B. tradition, C. take out, D. loan. A blue play button is on the right. A "Sonraki" button is at the bottom right.
- Soru 2 / 15:** "Some schools charge higher fees to overseas students." Options: A. tuition, B. take out, C. treatment, D. welfare. A blue play button is on the right. "Geri" and "Sonraki" buttons are at the bottom.
- Soru 3 / 15:** "When you an insurance policy, read the small print." Options: A. enormous, B. take out, C. single out, D. refuse. A blue play button is on the right. "Geri" and "Sonraki" buttons are at the bottom.
- Soru 4 / 15:** "We could apply for/take out a to buy a car." Options: A. pay back, B. debt, C. loan, D. available. A blue play button is on the right. "Geri" and "Sonraki" buttons are at the bottom.

Figure 9 Nearpod, Pre and Post Tests Week 2

A post-test was subsequently administered to the two classes supported by Kahoot and Educaplay. The lesson started with warm-up activities and then progressed toward the target words. The word instruction part was conducted in the same manner for both classes without any differences.

After the lessons were supported with a Kahoot game in the Kahoot class and an Educaplay game in the Educaplay class, a fill-in-the-blank post-test was administered on the last day of the week through Nearpod.

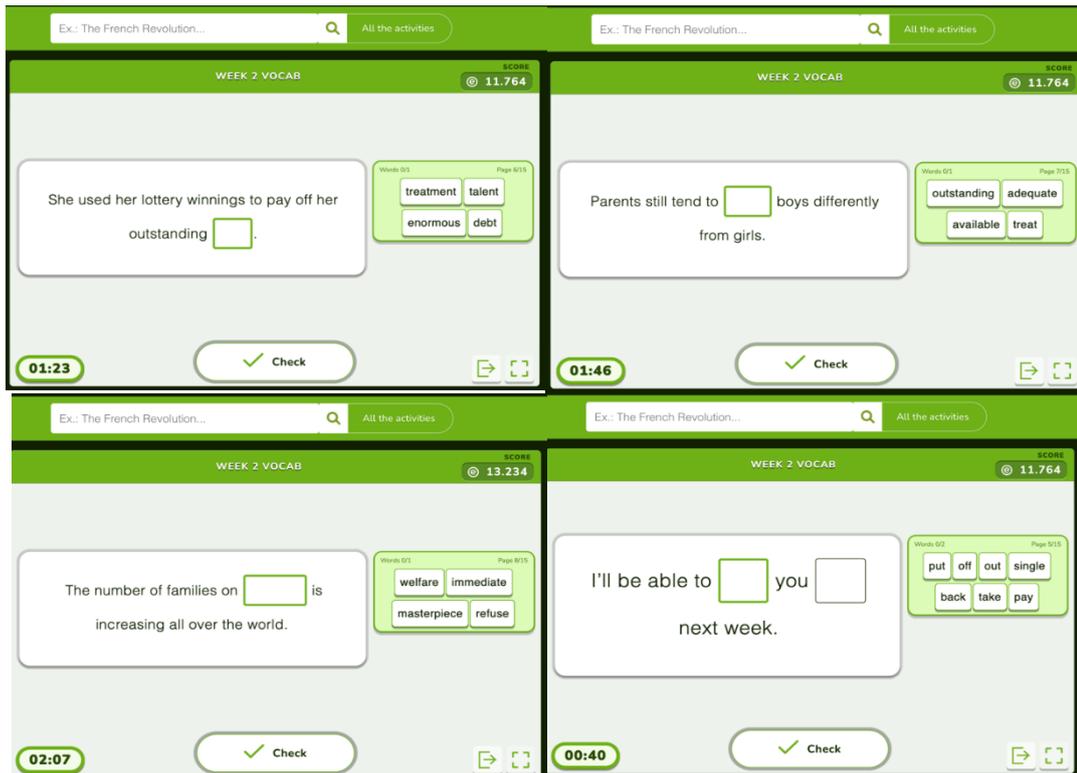


Figure 10 Educaplay Week 2 Activities

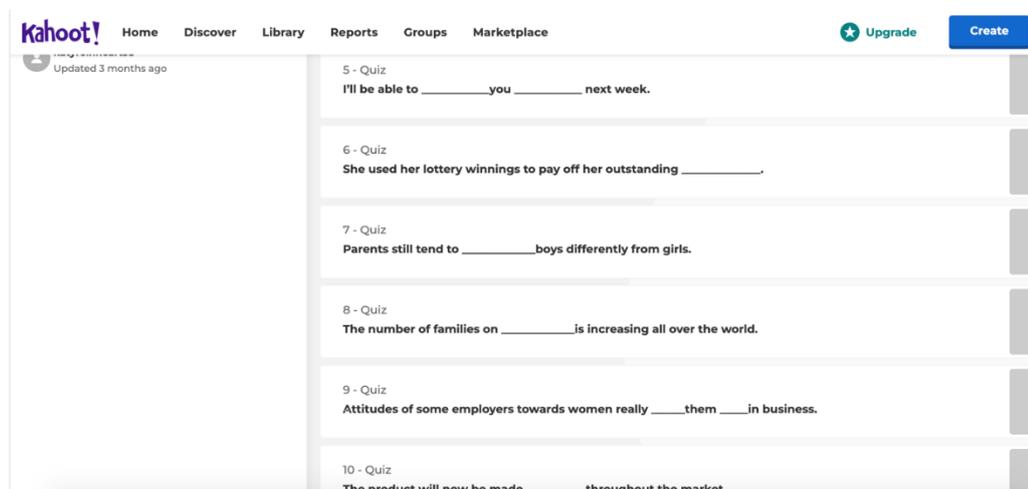


Figure 11 Kahoot Week 2 Activities

The same procedure followed in the first week was repeated in weeks 2 to 6.

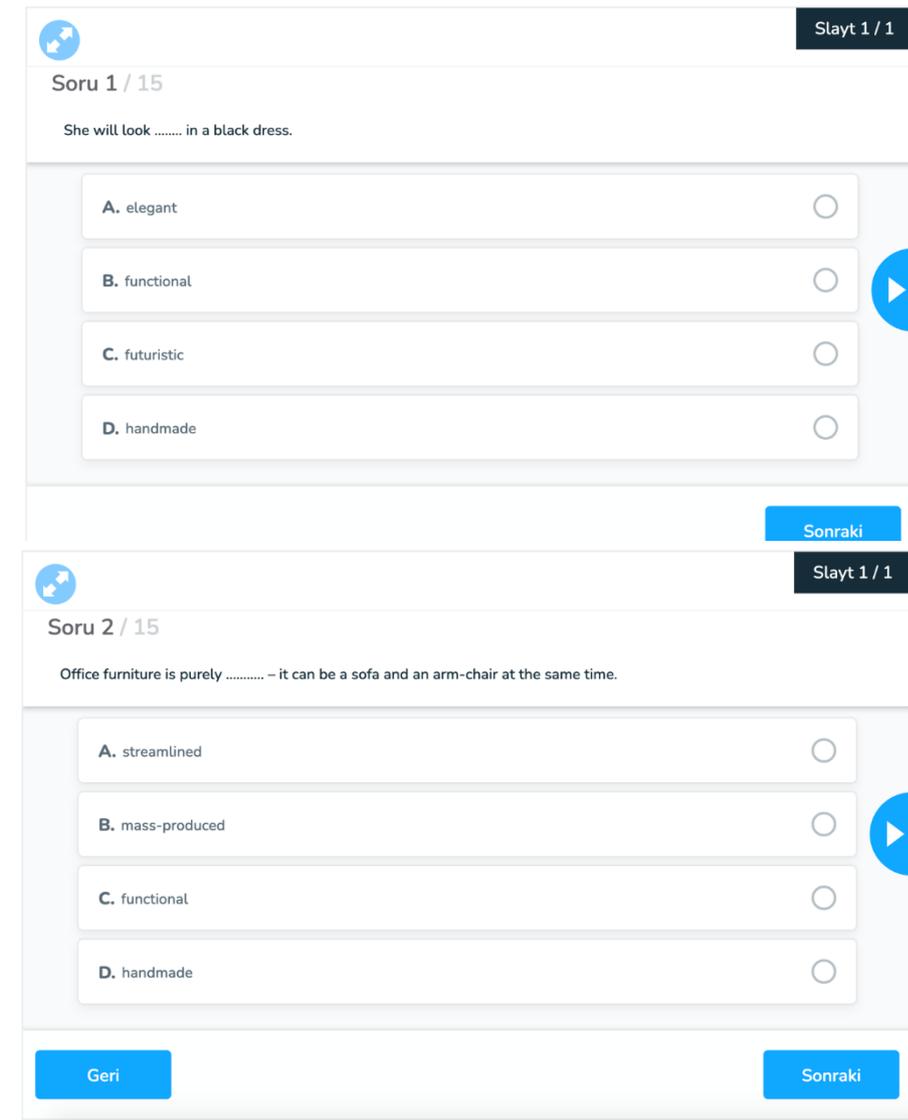


Figure 12 Nearpod, Pre and Post Tests Week 3

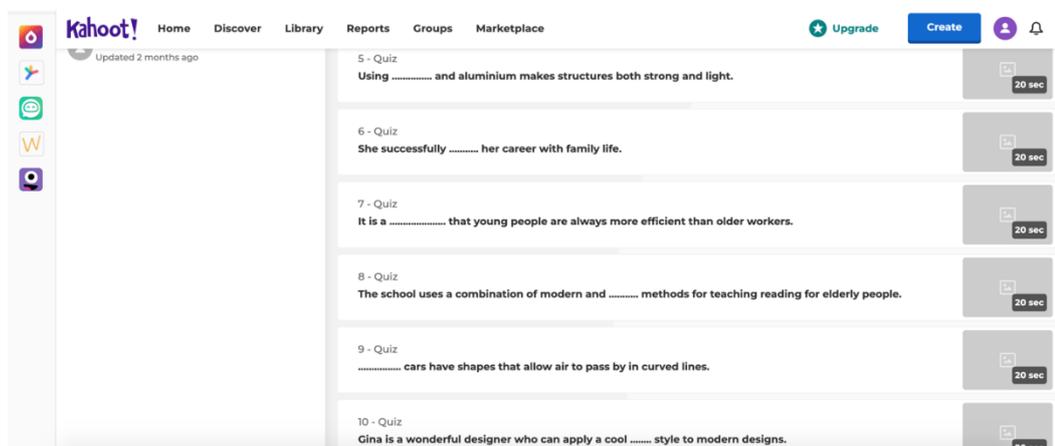


Figure 13 Kahoot Week 3

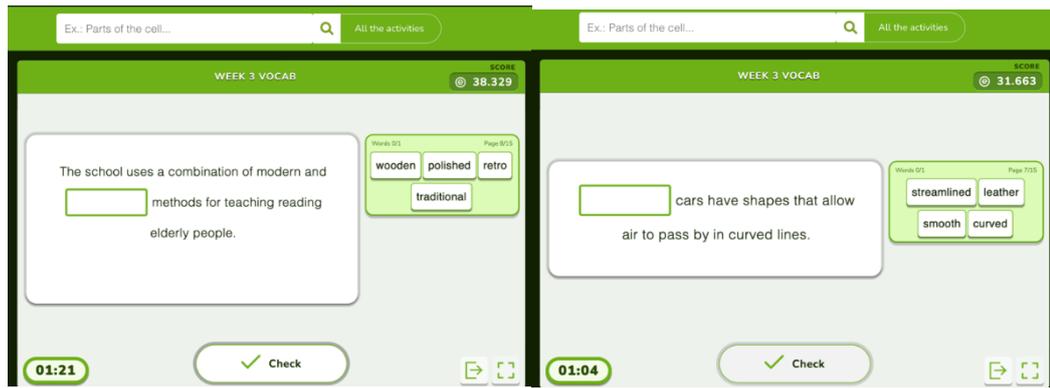


Figure 14 Educaplay Week 3

In the final week of the application, the 7th week, no work was done as it was a revision week, and no new words were taught using the application lasted a total of 6 weeks, and the necessary pre and post-tests were conducted within this period.

E. Data Analysis Procedure

In this thesis study, the researcher used quantitative analysis. The Statistical Packages for Social Sciences (SPSS) 1.1 was used to examine the pre and post-test data. Normality tests were performed prior to evaluating the quantitative data to select the proper statistical procedures for data analysis. The Shapiro-Wilk test was employed to test the normality of the variables because the study included 46 participants. When the Shapiro-Wilk value exceeds ($p > 0.05$), it is considered that the data are regularly distributed. When the sample size is smaller than 50, the Shapiro-Wilk test is widely utilized (Gissane, 2015). The normality test results for the pre and post-tests are shown in Table 3 below.

Table 3 Shapiro-Wilk Test Results for Pre and Post Tests

	Groups	Statistic	df	Sig. (2-tailed)
Pre-test	Experimental	.842	46	.001
Post-test		.940	46	.020

The results showed that the data did not have a normal distribution. To handle this problem an attempt was made to search for an alternative as far as normal distribution is concerned. An option, as suggested in the social sciences literature, was to study the dataset and test procedures while taking into account the skewness and

kurtosis values. Hair et al. (2013) claimed that when the value of skewness falls between +1 and -1, there are no deviations to the right or left. Skewness is a measure of symmetry. Beyond this range, they contended, skewness levels point to an aberrant distribution. The findings, as displayed in Table 4, suggested that both groups' achievement tests followed a normal distribution.

Given that the obtained data had a normal distribution, an independent samples t-test was the proper method to use for data analysis. The goal was to see if there was a statistically significant difference between the two experimental groups.

Table 4 Skewness and Kurtosis Measures for the Pre and Post Tests

Groups		Statistic	Std.Error
Pre-test	Skewness	-.512	.350
	Kurtosis	-.523	.688
Experimental			
Post-test	Skewness	-.147	.350
	Kurtosis	-.984	.688

As for the second research question, the Shapiro-Wilk test was applied to the second variable which is gender. The results of the Shapiro-Wilk test indicated that there was a lack of normal distribution in terms of gender. This was supported by the Shapiro-Wilk significance values being less than 0.05 for gender.

Table 5 Shapiro Wilk Test Results

Groups		Statistic	df	Sig.
Gender	Experimental	.620	46	.001

Since the distribution was not normal, as with the first research question, a Skewness and Kurtosis test was conducted for further investigation. Since the values fell between +2 and -2, the distribution was assumed to be normal. The values are shown in Table 6 below.

Table 6 Skewness and Kurtosis Test Results

Groups			Statistic	Std.Error
Gender	Experimental	Skewness	.461	.350
		Kurtosis	-1.871	.688

IV. RESULTS AND FINDINGS

This study consists of two main research questions. The primary objective of the study was to compare the effects of two different web-based platforms on the teaching of vocabulary to English as a Foreign Language (EFL) learners. The second important objective was to determine if there is any significant difference in the performance of male and female students using either Kahoot or Educaplay. This section will present statistical results through addressing two research questions:

- Is there any statistically significant difference in learners' vocabulary development when Kahoot and Educaplay are used?
- Is there any statistically significant difference between the male and female students' performance using either Kahoot or Educaplay?

A. Findings Related to the Research Question 1

The initial research question was whether the use of Kahoot or Educaplay creates a significant difference in students' vocabulary learning. To reach a conclusion regarding this question, both experimental groups were administered pre and post-tests and supported with Kahoot and Educaplay games. The pre and post-tests were conducted using different words within the same unit for the first three weeks, while the units changed weekly for the following three weeks. The SPSS was used for statistical analysis of the test results. Since the study was conducted with two separate experimental groups, an independent samples t-test was used to compare the pre and post-test results.

1. Difference in Pre-tests Results Between the Two Experimental Groups

At the beginning of each week, before the teaching sessions and before starting new units, a pre -test was administered to both groups. The main purpose of conducting this test was to understand whether students already knew the words that would be taught to them in advance.

In order to determine whether there was a significant difference between the mean scores of the pre-tests conducted every week, an independent samples t-test was applied. When looking at the results of Levene's tests for pre-tests, it was observed that both groups had equal variances in their scores. ($p > .05$). Additionally, equal variances were assumed for the continuation of the study.

Table 7 Group Statistics Comparing Educaplay & Kahoot Group for Pre-tests

Weeks	Group	N	Mean	SD	SEM
Week 1	Kahoot	23	1.826	.984	.205
	Educaplay		2.043	.877	.183
Week 2	Kahoot	23	1.956	1.580	.329
	Educaplay		1.391	1.196	.249
Week 3	Kahoot	23	2.173	1.613	.336
	Educaplay		1.434	1.561	.325
Week 4	Kahoot	23	2.173	1.556	.324
	Educaplay		4.130	8.640	1.801
Week 5	Kahoot	23	3.826	2.289	.477
	Educaplay		2.695	2.076	.433
Week 6	Kahoot	23	3.130	4.789	.998
	Educaplay		1.782	1.594	.332

When looking at Table 7, it can be said that the means are close to each other. Only in weeks 4 and 6, it appears that there is a slightly wider gap. To see if the observed differences are statistically significant, a set of independent samples t-tests was conducted. The results are shown below (Table 8).

Table 8 Independent Samples t-Test Comparing Educaplay & Kahoot Group for Pre-tests

Weeks	Sig	t	df	Sig. (2-tailed)
Week 1	.567	-.791	44	.433
Week 2	.275	1.368	44	.178
Week 3	.988	1.578	44	.122
Week 4	.138	-1.069	44	.291
Week 5	.332	1.754	44	.086
Week 6	.231	1.281	44	.207

The results of T-tests, as shown above, reveal that there is no statistically significant difference between the two groups' performances in the pre-tests.

As shown in the table above, there was no discernible difference between the two groups, according to the findings of the independent samples t-test performed on the unit pre-tests. Their means were fairly comparable prior to the treatment, as seen in Table 7 and 8 above. As a result, it can be inferred from the pre-test results that the vocabulary knowledge levels of the two experimental groups were equal, and the observed difference between them was not statistically significant ($p > .05$).

2. Difference in Post-test Results Between the Two Groups

After administering the post-tests to both groups, another independent samples t-test was conducted to examine if there was a significant difference between the performance of the two groups on a vocabulary test. Since the post-tests were conducted at the end of each unit every week, an independent t-test was necessary to determine if there was a statistically significant difference.

According to Levene's test, it was observed that both groups had equal variances in their scores ($p > .05$).

Table 9 Post-test Group Statistics Comparing Educaplay & Kahoot Group for Each Week

Weeks	Group	N	Mean	SD	SEM
Week 1	Kahoot	23	8.521	1.274	.265
	Educaplay		5.652	1.333	.278
Week 2	Kahoot	23	9.000	.953	.198
	Educaplay		6.521	1.591	.331
Week 3	Kahoot	23	8.000	1.128	.235
	Educaplay		6.826	1.192	.248
Week 4	Kahoot	23	8.956	.767	.160
	Educaplay		7.739	.751	.156
Week 5	Kahoot	23	8.358	1.584	.330
	Educaplay		4.956	1.821	.379
Week 6	Kahoot	23	8.347	1.584	.330
	Educaplay		6.478	1.162	.242

As seen from Table 9, there is a difference in mean scores between Week 1, 2, and 5, while the mean scores of Week 3, 4, and 6 appear to be closer to each other. A set of Independent Samples T-tests was applied to determine if there was a significant difference between the groups. The results are shown below (Table 10).

Table 10 Independent Samples t-Test Comparing Educaplay & Kahoot Group for Post-tests

Weeks	Sig	t	df	Sig. (2-tailed)
Week 1	.655	7.456	44	0,003
Week 2	.514	6.406	44	0.000
Week 3	.018	3.429	44	0.001
Week4	.833	5.435	44	0.001
Week 5	.948	6.738	44	0.002
Week 6	.126	4.563	44	0.001

Taking everything into consideration and looking at the results, it can be stated based on the analysis that, as indicated in Table 10, both groups showed an increase in scores after the teaching intervention. It can be concluded that there is a significant difference in the post-test scores between the two groups according to the results of the independent samples t-test ($p < .05$).

Finally, it can be concluded that Kahoot and Educaplay had a significant role in learning English vocabulary; however, the first research question examined whether Kahoot or Educaplay would have a greater impact or if they would have an equal effect. As the results of the analyses show, it was observed that Kahoot had a higher impact in this regard.

B. Findings Related to the Research Question 2

The second research question concerned determining whether there was a significant difference in the performance of male and female students using either Kahoot or Educaplay. The students in both groups were divided into two groups according to their gender from the very beginning of the study. In fact, Educaplay was used for females and Kahoot for males. Such being the case, there is no need for any further statistical analysis of the data and based on the mean differences between the two groups' post-tests and the T-tests conducted, it can be claimed that, compared with the females, males had a better performance on the post-tests.

V. DISCUSSION AND CONCLUSION

The aim of the present study was to investigate whether two different online vocabulary learning game platforms have any effects on preparatory students' English vocabulary learning and to determine if gender has any influence on the performance of students using the two online game platforms. Based on the analyses of the collected data and reviewing several similar studies conducted by researchers, the discussion and conclusion of the research questions are stated in this section.

A. Discussion of the Research Questions

The research questions were formulated regarding the impact of two different online platforms and students' gender on English vocabulary learning. The research questions are presented below.

RQ1: Is there any statistically significant difference in learners' vocabulary development when Kahoot and Educaplay are used?

RQ2: Is there any statistically significant difference between the male and female students' performance using either Kahoot or Educaplay?

1. Discussion of Findings for the RQ1.

The aim of the first research question was to determine whether the two different online game platforms used in English vocabulary education would create a significant difference in learning vocabulary by the students. The results of the T-tests, as shown in the third chapter, indicate that there was no statistically significant difference between the performances of the two groups in the pre-tests. However, based on the post-test results and after using the two online platforms, it was revealed that there is a significant difference between the two groups, as indicated by the results of the independent samples t-test ($p < .05$).

As stated in the first and the second chapter, the present study intended to compare the probable effects of using two different online vocabulary learning platforms (Kahoot and Educaplay) on a group of EFL learners and it was unique in that, bases of the review of literature, so far there has not been any study similar to the present one comparing two different online vocabulary learning platforms.

Following this important point, the researcher tried to discuss the findings of the study in light of relatively similar studies conducted on the same topic.

The first study similar to the present one, though not comparing two different online vocabulary learning platforms, was conducted by Quiroz, et al. (2021). They actually looked at the effect of using Kahoot! on enhancing the learning of English vocabulary in an EFL context.

In another study carried out in a similar context, Ahmet and Sayed et al. (2022) examined the effects of using Kahoot as a game-based learning aid on Iranian EFL learners' vocabulary recall and retention.

Likewise, In Medina and Hurtado's (2017) study, they sought to determine how the online vocabulary-learning and teaching tool Kahoot! can affect students' performance in an English class. The effectiveness of this tool in the vocabulary learning process in an English language school was evaluated over time using a quasi-experimental methodology.

Moreover, The study conducted by Maoud, Aldahami, and Aljehani (2020) sought to determine how using Kahoot, a web-based learning platform, may improve vocabulary learning for EFL secondary school students.

Furthermore, in Kayaaltı's (2018) study, two areas were looked into (a) the relationship between vocabulary learning and online games; and (b) any potential effects of gender on vocabulary learning through using online games.

Köse, Yimen, and Mede (2016) also tried to determine how the online vocabulary-building tool Quizlet affected Turkish EFL students enrolled in a preparatory course at a private school in Istanbul, Turkey.

Additionally, in a study done in 2019 by Chen, Chen, and Yang, they created an app for learning English vocabulary named EVLAPP-SRLM. This software included a self-regulated learning mechanism designed to improve students' self-regulation

skills and, as a result, their performance and motivation in a mobile learning environment.

In order to determine the effects of YouTube integration on vocabulary learning and retention among Saudi female students learning English as a foreign language at King Abdul Aziz University, Kabooha, and Elyas conducted a study in 2018. The study also sought to investigate how teachers and students perceived the use of YouTube for vocabulary development.

The main goal of Hung et al. (2018)'s study was to perform a comprehensive assessment (meta-analysis) of the empirical data related to the use and impacts of digital games in language teaching from 2007 to 2016.

The results of the present research are in line with those of the above-mentioned studies described in detail in chapter two and summarized here. In fact, all these studies reveal the positive effect of technology-based and web-based vocabulary learning games and techniques on EFL learners' vocabulary development.

In addition, the current study has become more specific as it focuses on two online gaming platforms both of which helped students to improve their vocabulary, though the effect of one, namely, Kahoot was larger than that of the other, i.e., Educaplay.

2. Discussion of Findings for the RQ2.

The second research question of the study was to investigate whether the variable gender would make a difference in the use of Educaplay and Kahoot for vocabulary instruction in English. As said in the previous chapter, no additional analysis of the collected data was necessary to answer the second research question since the students were separated into two groups according to their gender from the beginning of the study. According to the results obtained by examining the mean scores in the post-test and T-tests of both groups, male students using Kahoot outperformed female ones who used Educaplay.

When examining the relevant studies conducted on the probable effect of gender, one can observe that there are very few studies of this kind. In fact, studies related to using online platforms which also include the variable gender are scarce, or one might

even say, almost nonexistent. Therefore, it is quite challenging to make a general statement in this regard.

In the paucity of similar studies and in order to discuss the findings related to the second research question, in what follows the findings of a few studies which include both the use of technology-based language learning devices and gender will be reported.

Huang et al. (2013) conducted a survey to investigate the impact of computer anxiety on female college students' impressions of Web 2.0 learning applications within the context of the gender digital divide.

According to Yousof and Abousamra (2022), Virtual Learning Environments (VLEs) with a game basis are widely used in educational settings for teaching and communication.

As mentioned above, Chiang's study (2020) dealt with an online gaming platform which also included the variable gender. The main goal of this study was to determine how Chinese students felt about using Kahoot!, a mobile game-based learning app, in a college English as a Foreign Language (EFL) class in Taiwan.

In still another study, Demiröz and Turkmez (2020) compared English as a Foreign Language (EFL) instructors who use computer-assisted language learning (CALL) in their instruction versus those who do not in order to examine their perspectives and attitudes toward CALL.

All in all, based on both the results of the present study and the findings of the studies described in detail in chapter two and summarized above, it can be claimed that males seem to be more at ease with using technology-based language teaching/learning innovations and, compared to females, they seem to have a better performance on tests which involve the use of technology in one way or another.

B. Limitations of the Study

First of all, one of the biggest and most important limitations of the present study is the small number of participants. During the study, there were approximately 20 B2-level classes in the preparatory school, but it was not feasible to involve all of these

classes in the study due to university restrictions. So a total of 2 classes consisting of 46 students were included in the study.

Secondly, having only 15 questions in the Pre and Post tests administered each week may have limited the measurement of students' knowledge. In fact, statistically speaking, the higher the number of items in a test, the larger the test variance, and the higher the test reliability will be.

Another limitation is that, for a more comprehensive and systematic analysis of the data, the first-week Pre-test could have included questions covering all the vocabulary items presented to the students throughout the whole course, and the same test could have been given as the Post-test in the final week. This would have provided a better measurement of the student's overall performance based on the type of vocabulary learning game they used.

C. Suggestions for Further Research

The first and perhaps the most important one suggestion deals with the length of the present study which lasted for only 7 weeks. Similar future studies can be planned for a longer duration to include more detailed vocabulary teaching/learning activities and to investigate their long-term effects.

Another important issue may be the number of participants. As stated earlier, due to the limitations imposed by the university English Preparatory Program only 46 participants (divided into two groups) took part in the study. The inclusion of more participants in future studies could yield more reliable results.

The aim of the present study was to investigate the effects of using Kahoot and Educaplay on vocabulary learning of EFL learners. Further studies can be conducted regarding the impacts of using technology-based teaching aids on learning grammar and pronunciation as language subskills and reading, writing, listening, and speaking as language skills.

Additionally, this study was conducted with B2 level students. Another similar study can be undertaken employing students from other proficiency levels.

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