

Using Quizlet for enhancing primary stage students' vocabulary learning and motivation

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استخدام تطبيق كويزلت لتعزيز تعلم المفردات اللغوية والدافعية لدى طلاب المرحلة الابتدائية

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المستخلص:

هدفت الدراسة الحالية إلى قياس فعالية تطبيق كويزلت Quizlet على تعلم المفردات اللغوية وتعزيز الدافعية نحو تعلم المفردات اللغوية لدى تلاميذ الحلقة الأولى من مرحلة التعليم الأساسي. تم استخدام تصميم بحثي مختلط يتضمن تطبيق اختبار قبلي/بعدي لتعلم المفردات اللغوية، وكذلك تطبيق مقياس دافعية نحو تعلم المفردات اللغوية على مجموعة ضابطة وأخرى تجريبية لجمع البيانات الكمية ومعالجتها احصائياً، كما استخدمت أيضاً الملاحظات الميدانية كمصدر لجمع البيانات الكيفية وتحليلها. ولقد شارك ستون تلميذا وتلميذة من تلاميذ الصف الثالث بالحلقة الأولى من التعليم الأساسي في التطبيق الميداني للدراسة، والذي تم إجراؤه في الفصل الدراسي الثاني من العام الجامعي ٢٠٢٣-٢٠٢٤. تم تقسيم الطلاب بالتساوي إلى مجموعتين ضابطة وتجريبية، حيث درست المجموعة التجريبية المفردات اللغوية باستخدام تطبيق Quizlet بينما درست المجموعة الضابطة بالطرق المعتادة. وبعد تحليل البيانات كميًا ونوعيًا خلصت الدراسة إلى أن تطبيق Quizlet كان له تأثير كبير جداً على تعلم المفردات اللغوية والدافعية نحو تعلمها لدى طلاب المجموعة التجريبية، حيث أظهرت النتائج وجود فروق ذات دلالة إحصائية بين متوسطي درجات المجموعتين التجريبية والضابطة في اختبار تعلم المفردات اللغوية ومقياس الدافعية، لصالح المجموعة التجريبية، مما يدل على الأثر الإيجابي للتطبيق المقترح. تمت مناقشة النتائج وتقديم التوصيات والمقترحات لمزيد من الأبحاث المستقبلية.

الكلمات المفتاحية: تطبيق كويزلت، تعلم المفردات اللغوية، الدافعية نحو تعلم المفردات اللغوية، تلاميذ المرحلة الابتدائية.



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ABSTRACT:

The purpose of this study was to explore the effect of Quizlet-based vocabulary instruction on developing primary stage students' vocabulary learning and enhancing their vocabulary learning motivation. To this end, two intact classes of 60 students enrolled in the 3rd grade of the primary stage were divided into a control group and an experimental group. While the experimental group students learnt vocabulary through Quizlet, the control group students learnt vocabulary conventionally. The study utilized a mixed-research approach implementing a pre-post vocabulary learning test and a pre-post vocabulary learning motivation questionnaire for collecting quantitative data, and field-notes for collecting qualitative data. After analyzing data quantitatively and qualitatively, it was concluded that Quizlet had a very large effect on the experimental group students' vocabulary learning and motivation, who surpassed their counter peers in the control group. Quizlet was also found to be of medium effectiveness on students' vocabulary learning and motivation. Discussion of the findings, recommendations and suggestions for further research are stated.

Keywords: Quizlet, vocabulary learning, vocabulary learning motivation, primary stage students.

Introduction :

Vocabulary learning is crucial for EFL primary stage students. At this stage, young learners are in a critical period for language acquisition, and vocabulary forms the foundation of their ability to understand, communicate, and engage with the language. The more words students learn, the more they feel the barriers between them and the English language are removed. Drawing on this assumption, several approaches advocating vocabulary-based instruction for language learning have appeared, such as the lexical approach, the direct method, task-based language teaching and the natural approach. Although these approaches may vary in their focus and methodology, they all share the belief that vocabulary is a key element in language learning, since language is primarily made up of words and word combinations.

Vocabulary is also the building block of all language skills—listening, speaking, reading, and writing. Without a solid vocabulary base, students struggle to express themselves or understand others. When vocabulary is appropriately used in a given context, it can aid communication. The example of a person who is lost in a foreign country and can be understood on saying only one word, such as “food”, or “the railway station” can provide evidence for this claim.

Despite the importance of EFL vocabulary learning, a closer look at the Egyptian context reveals that EFL primary stage students demonstrate limited vocabulary proficiency. This can be evidenced by several studies that investigated the Egyptian EFL primary stage students' vocabulary skills. It has been documented that those students lack vocabulary knowledge which results in their inability to use vocabulary items correctly, and consequently, leads to communication failure. They have problems related to recognizing, recalling, guessing and producing vocabulary. The researchers attributed these problems to some reasons, among which is students' lack of interesting activities to learn and practice vocabulary, and therefore they are not motivated. This demotivation affects their vocabulary acquisition and retention negatively (Attia, 2022; El Sayed, 2022; Mohamed, 2021; Ali, 2019; Zaza, Amin, El-Sweedy & Elmeilegy, 2019; Mohammed, 2018).

Motivation is an important component which is closely related to vocabulary learning, that it can predict vocabulary learning strategies and vocabulary knowledge (Lee, Ahn & lee, 2022; Li, King & Wang, 2022). While motivation can enhance EFL students'

vocabulary learning, a demotivating learning environment may have counter effects (Tanaka, 2017).

On reviewing recent research in EFL motivation, Vonkova, Jones, Moore, Altinkalp & Selcuk (2021) found extensive use of technology which they identified as a viable path for enhancing EFL instruction. The use of technological and digital tools to increase EFL students' motivation has been approached by several studies. Examples include the studies of Panagiotidis, Panagiotidis, Krystalli & Arvanitis (2023), Marrahí-Gómez & Belda-Medina (2022), Wei (2022), Indahsari (2020), Hava (2019), and Sevy-Biloon & Chroman (2019).

One of the recent technological tools in the area of EFL vocabulary development is Quizlet. Quizlet is an online learning platform and can also be used as a mobile application that allows users to create, share and study a variety of educational content and instructional materials. Since it was founded in 2005, it has become a popular platform used by students, teachers and autonomous learners for studying different subjects. Quizlet is versatile and can be used for multiple purposes; hence, it adapts to different tasks and to a range of users. It can be used, for example, to learn new languages, to prepare for exams, and to master various topics through repetitive practice and interactive learning. Its primary products include digital flashcards, games, electronic assessments and live quizzes (Quizlet.com, Home page).

Quizlet can enhance the vocabulary learning motivation of EFL learners for several reasons. Firstly, it offers a variety of modules, including flashcards, games, collaborative activities, and tests. These modules feature activities like matching, multiple-choice questions, writing, voice recording, and listening, which cater to different vocabulary learning needs. As learners engage with these tools, they may experience increased self-efficacy, realizing their potential in the target language. Secondly, Quizlet gamifies the learning process, enabling vocabulary acquisition through tasks that make learning enjoyable (Sanosi, 2018). This gamification can reduce learners' anxiety and boost motivation. Lastly, Quizlet creates a purposeful learning environment with instant feedback, autonomy, and fun, which helps learners improve their language proficiency. As a result, they become more engaged in the use of target vocabulary in their daily lives, discovering their interests at their own pace and

gaining greater control over their learning process (Okkan & Aydin, 2020; Anjaniputra & Salsabila, 2018).

Based on its potentiality to promote EFL learners' vocabulary and motivation, researchers have explored the effect of Quizlet in their studies. Examples include, Atalan & Subasi (2023), Thu, Ho & Kawaguchi (2021), Aisyah (2020), Chaikowska & Zbaravska (2020), Montaner-Villalba (2019), Solhi (2019)¹, among others.

Despite the positive effects of Quizlet on EFL vocabulary learning and motivation, as concluded by the previously mentioned studies, a central factor to the development of both vocabulary learning and vocabulary learning motivation is the context in which learning takes place, for context accounts for different types of motivation and vocabulary use (Vonkova, Jones, Moore, Altinkalp & Selcuk, 2021). With regard to context, no study has tried to investigate this relationship in the Egyptian context, to the extent of the researcher's knowledge. Thus, the need for the current study which explores the effect of using Quizlet to enhance vocabulary learning and motivation in the Egyptian context arises.

1.1. Context of the Problem

During some professional learning community meetings that the researcher had with a group of EFL prospective teachers during their practicum, as she was their supervisor, the teachers discussed the problems and challenges they met with their students. The discussion included several points, and vocabulary instruction was an essential one.

According to those prospective teachers, lack of vocabulary was the most prominent reason for primary stage students' low proficiency in English. First, they reported that students continuously asked about meanings of unfamiliar words even when the teacher explained a grammatical rule. One teacher believed that some of her students' failure to successfully work on grammar or structure exercises was due to their inability to recognize meanings of words, rather than their inability to understand grammar itself. They added that when they reexplained the grammatical rule using simpler words, students' comprehension of the rule was better. Second, they also noticed that lack of vocabulary knowledge caused delay in accomplishing the reading tasks, for students spent a long time trying to pronounce and translate new words on the cost of the analysis and deep processing of the text. Third, they said that when asked to answer a question or retell a story, students always started speaking in English then they would shift to Arabic when they did not know how to say

particular words in English. Finally, when asked to write a paragraph, students spent most of the time asking for the English equivalents to the words they wanted to use in their writing, and by so doing they did not actually concentrate on ideas and their development.

To gain more insight into the problems reported by prospective teachers, some primary stage students were interviewed. Some of their parents were interviewed as well, after a parent- teacher meeting day, to stand on the challenges learners faced while studying English vocabulary.

Some of what students said was the following:

- “I hate learning new words because it’s very boring and it takes a lot of time. I know if I learnt all English words, I’d be super!”

- “Sometimes my mom uses an online dictionary to listen to new words. We laugh a lot because they pronounce words in a weird way. It’s not like we pronounce them at all!”

- “I can’t remember all these words! Words words words all of the time! There is no time for these words!”

The following statements were said by parents:

- “It’s very exhausting trying to convince your child to study all of the time! He wants to do nothing except playing mobile games or chatting with his pals online! He doesn’t want to open a book even!”

- “When I was a child, I always wrote lists of English words several times to memorize them. That’s how I improved my English. When you know lots of words, everything will be easy”.

- “My girl is quite good at English. The problem she has with Science and sometimes Math is more worrying for me. The topics themselves are OK, she can understand them, but you know because they are written in English...ah, you know, this is the problem; she can’t understand the English words, although she knows the Arabic words”.

- “When I help my girl with her study, we study lesson by lesson. First, we must have the external book, and we start by knowing the Arabic meanings of all the new English words. This step is easy because you can find a table including the new words and their Arabic equivalents. All we do is to study these words, memorize them and write them down a lot. We then move to the other parts of the lesson; we study the grammar of the lesson, and we read the passage if

there is any. It goes like this. We also have to review the words and their meanings before we start studying another lesson”

Based on the students' and parents' statements, the following observations can be gleaned:

- Learning vocabulary is overwhelming for some students, due to its amount. The large number of new words is frustrating to students as they cannot handle it.
- Students feel demotivated, or bored, when they study new words, because they do this only through rote memorization and copying the words several times. Absence of interesting and engaging activities of vocabulary learning makes students feel it is a tedious and difficult task.
- Both students and parents have the belief that vocabulary is a very important part of language learning, contributing to success as it makes learning *easy* and makes students *super*.
- Because some words are written differently than they are pronounced, students may feel confused, which affects their vocabulary learning and retention.
- Learning English words greatly contributes to students' comprehension and success in other subjects.
- Learning new vocabulary is a priority when studying English.
- Finally, students would rather spend their time playing mobile and online games than opening a book to learn new words.

It can be concluded that although both parents and students believe in the importance of learning vocabulary and its relation to language and academic success, it is still a difficult and tedious task for students who are demotivated to study vocabulary traditionally. On understanding the contextual factors of these challenges, the researcher aims, through the current study, at developing students' vocabulary learning and motivation via using Quizlet.

1.2. Statement of the Problem

The problem of this study lies in primary stage students' lack of vocabulary knowledge, which is negatively reflected on their development of other language skills and other academic subjects. The main reason for this problem is their demotivation to engage in vocabulary learning, as they feel frustrated, bored and overwhelmed by the amount of vocabulary they have to master. Henceforth, the current study tried to answer the following main question:

What is the effectiveness of Quizlet in enhancing primary stage students' vocabulary learning and motivation?

In answering this main question, the following sub-questions were also answered:

- What are the vocabulary learning and the vocabulary learning motivation levels that the 3rd year primary stage students should reach?
- What are their current levels of vocabulary learning and motivation?
- How can Quizlet be used to enhance those students' vocabulary learning and vocabulary motivation?
- What is the effectiveness of Quizlet in enhancing the students' vocabulary learning and motivation?

1.3. Hypotheses of the Study

The current study attempted to verify the hypotheses below.

- There is a statistically significant difference between the average scores of students in the experimental and control groups in the post-application of the vocabulary learning test as a total score, in favor of the experimental group.
- There is a statistically significant difference between the average scores of the experimental group students in the pre- and post-applications of the vocabulary learning test as a total score, in favor of the post-application.
- There is a statistically significant difference between the average scores of students in the experimental and control groups in the post-administration of the vocabulary learning motivation questionnaire as a whole and in each motivational construct, in favor of the experimental group.
- There is a statistically significant difference between the average scores of the experimental group students in the pre- and post-administrations of the motivation questionnaire as a whole and in each motivational construct, in favor of the post-administration.

1.4. Purpose of the Study

The purpose of the present study was twofold. On one hand, it aimed to investigate how far the use of Quizlet as an online tool could enhance the 3rd year, primary stage students' vocabulary learning. On the other hand, it sought to explore how far Quizlet raised their motivation for learning vocabulary.

1.5. Significance of the Study

This study has the potential to impact various stakeholders involved in the education and development of EFL learners, particularly it may be of significance to:

- **EFL Teachers:** They can get insights into how to motivate their students to learn through using digital tools. The study may provide them with practical ideas they can implement to promote students' vocabulary.
- **Curriculum Developers:** They can benefit from the study conclusions to integrate digital tools like Quizlet into EFL courses through designing curricula that are more interactive, personalized, and effective.
- **Parents of EFL learners:** They can get ideas as for how to support their children's language learning at home in an interesting and motivating way.
- **Educational Technology Developers:** They can further understand how technological products can be used in Educational and EFL settings and how technological features may be enhanced to better support EFL instruction, including vocabulary learning and motivation.
- **EFL Researchers:** The study may serve as a foundation for further research in the areas of language learning, technology integration in education, and motivation in the primary stage.

1.6. Delimitations of the Study

The study was delimited to:

- A group of 60 students enrolled in the 3rd year, the primary stage, at El Salam College Official Language Primary School, El Zatoon, Cairo, in the academic year 2023-2024. They were divided into a control group and an experimental group.
- The vocabulary prescribed in the Scope and Sequence of units 7, 8, and 9 in CONNECT Plus, Primary 3, Student's Book, Term 2.
- The second semester of the academic year 2023-2024.
- Four areas of motivation, i.e., interest/ enjoyment, self-efficacy, attitude, and using resources.

1.7. Definitions of Terms

Vocabulary Learning

In the context of vocabulary learning and use, Barakat & Ibrahim (2024) defined lexical skills as the ability to produce and



understand the words of a language (p. 427), while Attia (2022) defined vocabulary use as the students' ability to use the vocabulary outside the classroom and in their daily life (p. 15). According to Alqahtani (2015), "vocabulary is the total number of words that are needed to communicate ideas and express the speakers' meaning" (p.25).

In this study, vocabulary learning is defined as the primary stage students' ability to understand, memorize and use vocabulary appropriately in various interactive activities using Quizlet, which is further reflected in answering written vocabulary questions.

Vocabulary Learning Motivation

Gardner (1985)¹ defined language learning motivation as, "the combination of effort plus desire to achieve the goal of learning the language plus favorable attitudes toward learning the language" (Gardner, 1985: 10).

In the current study, vocabulary learning motivation is the students' desire or intention that triggers them to invest attention and effort in vocabulary learning activities, which is then positively reflected on their ability to understand and use vocabulary appropriately in reading and writing contexts.

2. Review of Literature

2.1. Vocabulary Learning

Vocabulary learning refers to the process of acquiring words in a foreign language, which serve as fundamental components for language mastery. The goal is to remember and apply these learned words in diverse language use contexts. Several terms have interchangeably been used to refer to this process in EFL literature. This includes vocabulary acquisition (e.g. Ali, 2023), vocabulary learning (e.g. Fengyu, 2023), vocabulary knowledge (e.g. Allal-Sumoto, Miyoshi & Mizuhara, 2023), vocabulary mastery (e.g. Rahmah, Tahir & Talib, 2023) and lexical knowledge (e.g. Al-Ta'ai, 2024).

Regardless of the terminology used, vocabulary can be acquired or learnt either intentionally or incidentally. Intentional vocabulary learning takes place within instructional settings of formal or informal educational institutes, where learners attend classes or courses for the purpose of learning a specific language. This is a deliberate process in which learners exert conscious efforts to learn new words, such as memorizing word lists, employing vocabulary

strategies, studying flashcards or using vocabulary applications. This provides for systematic and focused learning which helps in building a foundation for specific vocabulary sets.

Incidental vocabulary learning, on the other hand, happens naturally and coincidentally when learners encounter a word in authentic life situations while watching a movie or an advertisement, reading a product leaflet, instructions, or announcements, reading for pleasure, listening to songs or meeting a tourist, for example (Feng & Webb, 2020; Rodgers & Webb, 2020; Pavia, Webb, Faez, 2019). Here, learners do not learn vocabulary purposefully, but vocabulary learning becomes a byproduct of engaging in everyday life's interactions and experiences. This enables learners to learn words in context, making it easier to understand their usage and connotations. Both incidental and intentional vocabulary learning techniques can be integrated for better enhancement of vocabulary (Meganathan, Yap, Paramasivam, Jalaluddin, 2019). However, different variables affecting new vocabulary learning and which occur in either approach should be considered (Sinyashina, 2020).

In relation to the concept of intentional versus incidental vocabulary learning, the distinction between explicit and implicit, or direct and indirect, vocabulary instruction is also discussed in the literature. The difference between these two approaches lies in the degree of learners' conscious attention in learning specific vocabulary. Whereas explicit instruction involves explicitly teaching forms, meanings and usages of specific vocabulary items, implicit vocabulary learning does not directly target new words; instead, vocabulary is learnt subconsciously as learners engage in language-rich activities. In that, explicit vocabulary learning requires deep levels of cognitive processing; yet implicit vocabulary learning depends on the context in which vocabulary occurs, contextual clues, and repeated exposure to vocabulary (Martinez, 2021; Thomas, 2020). Although explicit vocabulary instruction has the advantage of raising learners' metacognitive awareness of their learning practices (Nia, Roohani, Hashemian, 2023; Kaivanpanah, Akbarian, Salimi, 2021; Tahir, Shah, Shak, Albakri, Adnan, 2021), it seems that research findings concerning the superiority of one approach over the other are not conclusive (Stratton, 2022; Webb, Yanagisawa, Uchihara, 2020).

Vocabulary is classified into two types based on how language learners experience them: receptive vocabulary and productive vocabulary. Receptive vocabulary refers to the words that a learner can recognize or understand while reading or listening to the language



but may not necessarily use in speaking or writing. Conversely, productive vocabulary is the words a learner can actively use when speaking or writing and can apply in various language use contexts. In that, productive vocabulary requires higher levels of language proficiency and is not as large as receptive vocabulary, since people can often recognize more words than those they actually use. Through effective vocabulary tasks that evaluate learner's word choice and appropriateness in practical contexts, receptive vocabulary can be improved and promoted to productive ones (Mohammadi, Valizadeh, Jalal & Xodabande, 2024; Rahmani, Asadi, & Xodabande, 2022; Teng & Xu, 2022).

Whether receptive or productive, vocabulary learning presents a challenge for EFL learners. These challenges of vocabulary learning are attributed to a number of issues. First, word families in English comprise a variety of root words, inflectional words, in addition to derivatives, making it difficult for learners to master them all (Barclay & Schmitt, 2018). Second, similar and multiple-meanings words may confuse learners (Kesmez, 2021). Third, pronunciation, idioms, collocations and phrasal verbs are a considerable concern for learners (Surmanov & Azimova, 2020). Finally, mismatches of spelling and pronunciation (Hasan, 2024; Lutfiyah & Nuraeningsih, 2022), irregular plural forms (Al-Jarf, 2022), using words in a proper context (Abuhabil, Alramly, Aljoroshee, Jouely, 2021) are common problems that EFL learners face when learning vocabulary.

Research trends on developing EFL vocabulary and addressing the aforementioned challenges faced by EFL learners are diverse. The most widely researched areas are vocabulary learning strategies and use of digital tools, which dominate the vocabulary learning literature. EFL researchers have shown significant interest in exploring the field of vocabulary learning strategies, especially memory and retention strategies, with the purpose of teaching these strategies to students so that they can build a repertoire of vocabulary needed for language advancement (e.g. Abebaw & Nuru, 2024; Ayana, Mereba & Alemu, 2024; Bayabel & Tahir, 2023; Abu Al-Saoud, El-Helaly & Abdel-Aal, 2022; Lee, Ahn & Lee, 2022; Riandi, 2022; El-Shamy, 2021; Nagodavithana & Premarathne, 2021; Gu, 2021; Fan, 2020; Ghalebi, Sadighi, Bagheri, & Qian, 2020, Wu, 2019). Researchers tend to advocate explicit vocabulary strategies instruction to raise learners' awareness of meanings and applications

of words (Hakimova & Nematjanova, 2023) and recommend that teachers focus not only on the words themselves, but also on the learning contexts in which they are used, in order to enhance students' situational motivation (Chiew & Ismail, 2021; Wu & Tian, 2021).

Using electronic devices and technological applications is another extensively studied area in the field of vocabulary learning. These tools offer interactive and engaging ways for learners to acquire new vocabulary, providing access to a wide range of digital resources such as flashcards, quizzes, and language games. Additionally, mobile apps and online platforms enable personalized learning experiences by allowing learners to track their progress and practice at their own pace. The integration of multimedia, including audio and visual aids, further enhances the retention and understanding of new words. Overall, the use of technology in vocabulary instruction has shown promising results in improving learners' motivation and vocabulary retention. Examples of these studies include Alqahtani (2024), Kayra (2024), Wang, Wu, Chenm, Wang, Li & Wang (2024), Zhou, Jin, Li, Song, Huang & Lin (2024), Azi (2023), Kurd, Hassan & Iqbal (2023), Nasrul & Fatimah (2023), Tao & Modehiran (2023), Torres, Solano & Cuesta (2023), Xodabande & Hashemi (2023), Chen (2022), Hasan, Fakh, Seraj & Hasmirati (2022), Seraj & Rahmatullah (2022), Sudarmaji, Forsia, Siregar & Yusuf (2022), Abdel-Rahman (2021), Al-Ahdal & Alharbi (2021), and Deari (2020).

Other approaches to developing vocabulary and vocabulary learning motivation also include the use of active learning techniques, such as song lyrics (Sitepu, Safitri, Sukmawati, Kusumoriny & Nasution, 2023), group discussion (Elmetaher, 2021), visual, auditory and kinesthetic techniques (Hidayatullah, Munir & Tawali, 2022), authentic and cultural vocabulary instruction (Nguyen, 2022; Namaziandost, Tavakoli & Izadpanah, 2021; Canga Alonso, 2020), and task-based instruction (Naqsyabandiyah & Dehghanitafti, 2023; Huang & Gandhioke, 2021; Nychkalo, Jinba, Lukianova, Paziura & Muranova, 2020).

Varied vocabulary assessments should be integrated into EFL vocabulary-based instruction to ensure that learners not only acquire a broad range of vocabulary, but also develop a deep understanding of how to use this lexical knowledge in authentic communication (Fasih, 2022; Ritonga, Tazik, Omar, Dehkordi, 2022; Dujardin, Auphan, Bailloud, Ecalle & Magnan, 2021). Vocabulary assessment can take different forms, ranging from multiple choice, matching, or fill in the blanks questions, concept mapping (e.g. Estaji & Mirzaii, 2018),



pictures (e.g. Güngör & Önder, 2023) definitions or translations of words (e.g. Hariyanto & Wulandari, 2019), responses to writing or speaking tasks (e.g. Uchihara & Clenton, 2023; Ahmadi, Behnam & Seifoori, 2021; recommended by Schmitt, Nation & kremmel, 2020) to qualitative assessments that measure the depth of vocabulary knowledge, (e.g. Akram, Azim, Nawaz & Tabassum, 2022; Aman, Asif & Muzaffar, 2023) such as word use in context, collocations, connotations and grammatical patterns (e.g. Sipayung & Saragih, 2023). Technological tools are also increasingly used in this concern, particularly that they can tailor assessments to individual learners' needs and provide instant and formative feedback (e.g. Shamshiri, Esfahani, & Hosseini, 2023; Nourdad & Banagozar, 2022; Rezai, Rahul, Asif, Omar & Jamalyar, 2022; Yarahmadzahi & Goodarzi, 2020).

2.2. Vocabulary Learning Motivation

Learners' motivation has been a major area of interest in the field of language learning research, for its undeniable contribution to achievement and success. Therefore, several theories have attempted to explain language learning motivation, each offering insights into what drives learners to learn languages. From the social-psychological perspective, Gardner's (1985)₂ socio-educational model explains motivation in terms of integrative and instrumental motivation. In integrative motivation, learners seek to integrate into the culture and practices of the language they learn. In instrumental motivation, learners are driven by practical benefits, such as academic success or career advancements. According to cognitive and educational psychology, on the other hand, self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000₁), classifies motivation into intrinsic motivation whereby learners have inherent or internal interest in the language and view it as enjoyable and satisfying to learn, and extrinsic motivation which is influenced by external rewards such as grades, social recognition or job opportunities.

Other theories explain motivation from learners' perspectives and how they esteem or believe in themselves. Examples include Dörnyei's (2009) L2 Motivational Self System, with several factors affecting learners' self-efficacy, including future ideal vision of oneself, societal or familial expectations, and influences of experiences and others. Similarly, expectancy-value theory bases motivation on learners' expectations of success and the value they

attach to language in achieving their goals (Eccles & Wigfield, 2002). This goal-driven motivation is also asserted by goal-oriented theories, differentiating between mastery goals (improving competence and understanding of the language) and performance goals (demonstrating this competence in communicative contexts) (Cheng, 2023). Another motivation theory is Weiner's (2010) attribution theory which explains how learners attribute their success or failure in language learning. If they are attributed to controllable factors, learners are likely to be motivated, and if they are attributed to unchangeable factors or fixed traits, learners may lose motivation.

A unique explanation of language learners' motivation is credited to Ushioda's (2009) person-in-context relational view of motivation and Dörnyei, Henry & Muir's (2016) directed motivational currents, which offer a more holistic and dynamic perspective on language learning motivation, focusing on the interaction between individuals and their specific contexts rather than viewing motivation as a static, separated factor. Wang, Huang & Hsu (2015) claim that this gradual shift from general trait motivation to situation-specific task motivation is remarkable as it investigates pedagogical practices in light of a specific learning environment, task requirements and learners' actions, thus task motivation is modeled as a complex dynamic system (Hiromori, Okunuki, Kashimura, Kamemoto, Suzuki & Nakamura, 2024; Long & Zheng, 2023; Wang, Huang & Hsu, 2015), while still operating under the general umbrella of trait motivation. Contextualizing motivation has inspired research to track language learners' motivation in different instructional contexts and explore possible changes in this motivation in accordance with specific delivery of instruction, rather than applying general motivation surveys irrelevant to particular situations (Hennebry-Leung & Lamb, 2024, Thanh & Huan, 2012).

Theories of language learning motivation apply to all areas of language learning, including vocabulary learning. Vocabulary learning motivation refers to the drive that encourages language learners to engage in learning new words and expand their vocabulary for internal (e.g., enjoyment, personal interest, personal growth) or external (teacher's rewards, passing exams, employment) reasons (Ryan & Deci, 2020).

The relationship between learners' motivation and their vocabulary learning has extensively been explored in language learning research. This research suggests a strong correlation between language learners' motivation and vocabulary learning. In Lee, Ahn &

lee's (2022) study, for example, motivation was found to predict students' vocabulary learning strategies and vocabulary knowledge, with intrinsic motivation having a greater influence on vocabulary development than extrinsic motivation. This finding goes in agreement with other studies, such as those of Fitria (2023), Anggraini (2022), Azel, Novitri, Masyhur (2022), Khalishah (2021), Oktaviani (2021), Wu & Tian (2021), Sepyanda (2019), and Susanto, Halim & Nuwrun (2019).

There are several components of vocabulary learning motivation, including engagement, autonomy, competence and self-efficacy. The concept of engagement is at the heart of recent developments in language learning motivation theory, as it is related to task-specific situations. This concept was introduced in Csikszentmihalyi's (1975) flow theory which focuses on learners' engagement in the language learning task, defined as the quantity and quality of "learners' active participation and involvement in a language learning task" (Hiver, Al-Hoorie, Vitta, & Wu, 2024, 202). To engage learners and keep them motivated, the task should be adequately challenging to learners, neither very easy that they feel bored nor very difficult that they feel frustrated. Enjoying the tasks also contributes to enhancing this engagement (Jin, 2024).

Another integral component of learners' vocabulary learning motivation is autonomy. The relationship between motivation and autonomy is dynamic and reciprocal, where each one enhances the other. Autonomy fuels intrinsic motivation, as learners are not controlled by external incentives and feel more empowered and engaged when they manage their vocabulary learning (Ryan & Deci, 2000). Conversely, motivation drives learners to seek out more strategies for expanding their vocabulary, as motivated individuals are more likely to take initiative and responsibility for their learning. This mutual influence creates a positive feedback loop, with each strengthening the other and fostering deeper, more sustained vocabulary learning (Ibrahim & Alhodairy, 2023; Ceylan, 2021; Wong & Luo, 2021, Wang, Huang & Hsu, 2015).

Competence is a basic component of learners' motivation (Satka & Garneva, 2024; Wentzel, 2021). Competence is the desire to feel capable and effective in one's actions. In language learning, a sense of competence is fostered when learners experience success and progress in their vocabulary knowledge, which in turn increases their

motivation to continue (Urhahne & Wijnia, 2023; Seven, 2020; Elliot & Hulleman, 2017).

Regarding self-efficacy, a significant relationship has been found between learners' motivational beliefs (as perceived by self-efficacy or self-esteem) and their vocabulary learning (Li & Wang, 2024₁; Li & Wang, 2024₂; Nosratinia & Mohammadzamani, 2014). Successful vocabulary learning experiences boost students' confidence, and as a result, increases their motivation to initiate and sustain learning (Graham, 2022; Deng & Trainin, 2020).

A variety of internal and external factors influence vocabulary learning motivation. Highly influential factors include learner's perceived beliefs about themselves, comprising perceived competence and perceived autonomy (Ceylan, 2021; Jenö, Nylehn, Hole, Raaheim, Velle & Vandvik, 2021; Tanaka, 2017). External factors include the impact of significant others, i.e., teachers, peers and parents (Noels, Taylor, Saumure & Katz, 2019). However, current research on motivation suggests that task-specific motivation comprises a complex system of factors interweaving together to affect learners' motivation, and thus, situational or contextual factors, rather than fixed traits or variables, have the potential to better account for learners' motivation. When these task-specific contexts provide learners with successful learning experiences, learners enhance their self-efficacy beliefs and are likely to stay motivated (Yuce, 2023).

Assessment of vocabulary learning motivation can be conducted through quantitative as well as qualitative techniques. Examples of these techniques include direct observations, by which learners' practices and behaviors in a given vocabulary learning task provide evidence of their motivation levels (e.g. Kainta & Rombot, 2020) and field notes (e.g. Solikhah, 2020). Self-reports represent another technique to investigate learners' motivation through their beliefs or statements about themselves as language learners; they can be utilized in various forms, including questionnaires (e.g. Li, King & Wang, 2022; Azizi, Nazariani, Gholami & Kruk, 2020), interviews (e.g. Wang, 2020; Napiah, 2019), or think-aloud reports.

2.3. Using Quizlet to enhance vocabulary learning and motivation

The incorporation of computers and technology into vocabulary instruction has recently highlighted the effectiveness of these methods in enhancing vocabulary learning, leading to increased research on vocabulary learning and teaching strategies. Originally developed by Andrew Sutherland to help himself learn and remember



French words; Quizlet has gained recognition as a significant self-learning tool. Quizlet is a highly user-friendly online platform and mobile application for both teachers and students, which depends on study sets, or sets of words, that can be approached through five study modes and three games designed to create various vocabulary activities. These modes can be autonomously used or created by learners, or under the supervision and guidance of teachers. They include Flashcards, Learn, Write, Spell, Test, Match, Blast and Live¹.

Flashcards: This basic tool is similar to regular paper flashcards. The flashcards may include words and their meanings, concepts and their definitions or questions and their answers. Unlike paper cards, these cards can be customized to be viewed in order or randomly through shuffling to prevent the list effect. Each card may show either the target English word, or its Arabic equivalent. Another option is to show both sides of the card at the same time. The card can also be flipped so that students can check whether they can remember and match the two sides. Pictures illustrating the words, audio pronunciations, and/or stars that mark important or difficult words can be added.

Learn: While *Flashcards* can be considered the presentation phase of new vocabulary, *Learn* can be considered the practice phase. Learning in this mode is personalized, as the learner is asked to identify his/her goal (whether to study quickly or memorize all words, for example), and also to assess his/her familiarity with the content included in the set. This personalization step is very important as it creates a personalized study sequence based on the learner's goals and familiarity with the content. At this mode, the learner can select to write answers to questions or to answer multiple choice questions, which applies to both text and images. Learners can practice first language/ target language equivalents or word/definition exercises. Questions become more challenging as learners proceed. Learners can

¹ . Quizlet study modes, at: [Quizlet Study Modes | Quizlet](#), © 2024 Quizlet, Inc. [DU Ed-Tech Knowledge Base](#), Introduction to Quizlet, 2022, at: [Introduction to Quizlet – DU Ed-Tech Knowledge Base](#)
Kharbach, M. (2024). **What is Quizlet and How to Use it to Create Interactive Flashcards and Quizzes?**, *Educators Technology*, at: [What is Quizlet and How to Use it to Create Interactive Flashcards and Quizzes? - Educators Technology](#), © 2024 · *Educators Technology*.

also listen to the pronunciations of different items of the questions. Answers are followed by instant feedback, which is displayed at the end of the mode as performance statistics highlighting the correct and incorrect words. This performance statistics is known as *Checkpoint* which focuses on tracking vocabulary learning and helps students stay motivated with encouraging study reminders. In addition, Quizlet Checkpoint serves as a tool for formative assessment which informs future lesson plans.

Write: This mode is embedded in the Learn phase, as learners can write the definitions or meanings of previously learnt vocabulary, or vice versa. They can also type irregular forms of verbs in the past or parts of speech if the content of the *Flashcards* targets grammatical forms.

Spell: In this mode, learners listen to some words which they are required to type correctly. The speed of pronunciation can be adjusted as needed through enabling faster or slower audio versions. This mode helps students practice spelling, and it also provides immediate feedback, i.e., if a word is misspelled, the system provides the correct spelling, and a record of the learner's performance is displayed at the end.

Test: In this mode, students' overall vocabulary learning is assessed. This can be done in different question forms, including true/false, match, multiple choice and writing questions which are automatically generated and corrected by the system.

Match: In this mode, learners play a game in which they click on a word or concept and click on its definition quickly. Different cards of words, definitions, translations or images may be scattered on the screen and students match corresponding items. The purpose of this game is to reinforce vocabulary meanings. The system keeps track of high scores so that students can compete for the top score.

Blast: This is a new game mode where terms and their definitions are displayed on moving asteroids, and the goal is to be the first one who blasts the correct asteroid with the correct term or definition. This matching game helps students practice vocabulary through active recall and quick thinking.

Live: This is a collaborative game mode in which students can play as randomly assigned teams or as competing individuals after connecting to Quizlet Live.

As can be noticed, Quizlet has several modes facilitating the presentation, practice and assessment of vocabulary based on a variety of activities. There are several advantages of using Quizlet in the EFL



classroom with regard to its feasibility. First, it is easy to access, for it is free and simple and can run on PCs or mobile phones. Second, it is rich in previously created resources and instructional materials that can be used by teachers or students. Third, it does not need training to use; teachers can create vocabulary study sets in a few minutes, and learners can immediately recognize how to move from one mode or game to another. Finally, it allows integrating any content relevant to language learning, including the use of L1 (Tanjung, 2020; Anjaniputra & Salsabila, 2018), and it allows the contextualization of lexical items (Solhi, 2019)².

In language learning contexts, using Quizlet is not limited to the development of vocabulary skills, but it can also be used for teaching and learning other language areas, such as writing (e.g. Alarcón & Xiomara, 2019), grammar (e.g. Trunadikara, 2023), oral and written language skills (Korkealehto & Siklander, 2018) and reading comprehension (Maidloh, Anam & Widyastuti, 2024; Klimova & Zamborova, 2020). Moreover, Quizlet was found to enhance learners' speaking proficiency as it increased students' ability to use target vocabulary in both reception and production activities (Fursenko, Bystrova & Druz, 2021).

Quizlet is particularly effective for vocabulary development. After conducting a meta-analysis comprising about 23 studies which employed Quizlet from 2016 to 2023, Özdemir & Seçkin (2024) asserted the statistically significant impact that Quizlet was found to have on foreign language learners' vocabulary learning achievement, vocabulary retention and attitude. They attributed this finding to Quizlet combination of visuals and cognitive visualization aspects, along with its interactive nature, which can help create a more involving and immersive learning environment that supports learning and retaining large amounts of foreign vocabulary knowledge. They also recommended integrating it into language courses to leverage these benefits.

In another study, Sitorus (2023) adopted a two-cycle action research approach using qualitative (i.e., observations, diary notes, interviews and documentation) and quantitative (pre/post tests) data collection and analysis techniques to investigate the effect of Quizlet on vocabulary mastery. The findings proved the success of Quizlet in developing the students' mastery of vocabulary, engaging them, and fostering their motivation and participation. These findings are in line

with the study of Hamida, Prawati and Hadriana (2023) who also founded that Quizlet was highly effective in improving students' vocabulary mastery. They reported that students were motivated and eager to learn and attributed the findings of their study to the capacity of Quizlet to help students develop their listening, translate words and expand vocabulary.

Similar results were obtained by Todorova (2023) who concluded that systematic use of Quizlet in classroom activities and independent study leads to improved learning outcomes and notable progress in English vocabulary acquisition. The effectiveness of Quizlet in enhancing vocabulary learning has further been confirmed by a number of studies including those of Dewi (2023), Nur & Putri (2023), Fadhilawati, Ulum & Laksmi (2022), Lin & Chen (2022), Lubis, Johan, & Alessandro, (2022), Avisteva & Halimi (2021), Berliani & Katemba (2021), Ho & Kawaguchi (2021), Kurtoğlu (2021), Setiawan & Putro (2021), and Al-Malki (2020).

Quizlet can also be efficiently utilized in ESP courses or content-based instruction, as it proved effective in developing students' vocabulary skills in various disciplines and content areas including engineering (Ningsih, Nasrullah & Rosalina, 2024; Akhshik, 2021), law and legal studies (Huong & Chi, 2023), clinical health and pharmacology (Zeitlin & Sadhak, 2022), business (Platzer, 2020), aviation (Fursenko, Bystrova & Druz, 2021), and ecology (Valeeva, Pavlova & Zakirova, 2019).

Drawing on the findings of the previous related studies, it can be claimed that the effectiveness of Quizlet in enhancing language proficiency in general, and vocabulary learning in particular is attributed to four of its characteristics. First, *gamification*, which fosters learners' interest and inner motivation, can be used as a single mode of Quizlet to develop vocabulary knowledge (Shadrina, Korneeva, & Kabanova, 2024; Chen, Yang & Mei, 2021; Waluyo & Bucol, 2021). Second, the *collaborative and teamwork* language and vocabulary learning activities that it offers foster an engaging learning environment where students can work together to create study sets, share resources, and compete in interactive games, enhancing both understanding and retention of vocabulary (Nur & Putri, 2023; Van, Thuyet & Thanh, 2020). Third, its features allow for the integration of visual aids through which *contextualization of vocabulary items* can be supported. This *cognitive visualization* activates both verbal and nonverbal systems and can be responsible for the effect of Quizlet in increasing vocabulary retention (Tiang-uan, 2023; Chaikovska &



Zbaravska, 2020, Korlu & Mede, 2018). Its effect on vocabulary retention can also be attributed to its *Test* mode that helps learners to identify information gaps and attempt to find information (Nguyen & Le, 2023; Nguyen & Le, 2022). Finally, the *autonomous learning* experiences it facilitates can significantly contribute to the enhancement of learners' metacognitive and self-regulation skills. Through using Quizlet, independent learners can manage their learning, generate self-study material, prepare themselves for exams, and reflect on and evaluate their vocabulary acquisition based on the feedback they receive (Synekop, Lavrysh, Lukianenko, Ogienko, Lytovchenko, Stavytska, Halatsyn, & Vadaska, 2023; Nguyen, Nguyen, Nguyen, Mai, Le, & Dao, 2022; Bueno-Alastuey & Nemeth, 2020; Chaikovska & Zbaravska, 2020; Körlü & Mede, 2018).

Researchers have also explored the effects of Quizlet in integration with other teaching methods and approaches. Ningsih, Amelia, Nurfitriah, Susilawati, Khalid & Fitria (2024), for example, implemented Quizlet in flipped classrooms, while Shadrina, Korneeva & Kabanova (2024) incorporated it into virtual classrooms and Lytovchenko, Ogienko, Kriukova, Meleshko, Yamshinska, Voronina, & Kutsenok (2022) employed it in an online problem-based learning context. The convenience and flexibility of Quizlet in a diversity of instructional contexts in which other methods can be integrated and various content areas can be enhanced make it a valuable tool for educators seeking to reinforce learning, foster engagement, and accommodate different learning styles effectively.

Quizlet appeals to language learners as evident by a number of studies. For example, in investigating students' perceptions and preferences of using Quizlet in comparison to other technological tools, Bueno-Alastuey & Nemeth (2020) found that their students had very positive attitude towards Quizlet over podcasts, which they considered an important finding because it impacts students' motivation that plays an important role in learning. This finding goes in agreement with the findings of other studies, such as Bayaksud, Degeng & Razali (2024); Djamdjuri, Thoyib, Retnowati, Furqan & Holifah (2023), Tran & Nguyen (2023), Pham (2022), Aksel (2021), Aprilani & Suryaman (2021), Huong & Hong (2020), and Sangtuptim (2018). These studies attributed students' positive perceptions of Quizlet to its accessibility, convenience, ease of use, interactivity, and the collaborative, engaging and visual characteristics it has; and

consequently, they concluded that Quizlet raised students' levels of motivation for vocabulary learning. In the same line, Quizlet can also have a positive impact on students' as well as teachers' beliefs about language learning (Wang, Lam & Hu, 2021; Toy & Buyukkarci, 2020).

Research has shown that learners' perceptions and beliefs can be reliable indicators of their motivations (Aprianto, Syahid & Abdussamad, 2024). Henceforth, the positive impact of Quizlet on students' vocabulary learning motivation is claimed. The relationship between Quizlet and motivation is often positive, as the platform's interactive tools engage students in active learning. The gamified elements, immediate feedback, and variety of study modes can increase intrinsic motivation by making learning more enjoyable and rewarding (Özdemir & Seçkin, 2024; Mykytka, 2023; Andarab, 2019; Cinar & Ari, 2019). Additionally, students can track their progress, which fosters a sense of achievement, further enhancing their motivation to continue studying. The flexibility to study at one's own pace also supports autonomy, which is a key factor in maintaining long-term motivation (Nguyen, Nguyen, Nguyen, Mai, Le, & Dao, 2022).

Empirical evidence of the positive effect of Quizlet on vocabulary learning motivation is provided by Setiawan & Wiedarti's (2020) study, for example, which used vocabulary learning motivation checklist to track students' motivation while engaging in Quizlet activities. The researchers reported that most students were more enthusiastic about learning vocabulary and ready to work independently. They also did not feel bored with learning vocabulary, as elicited by the motivated students' indicators checklist, which resulted in an overall increase in their motivation levels.

Students' perceived vocabulary learning motivation can also be promoted by Quizlet. On investigating learner's perceptions of Quizlet, Bayaksud, Degeng & Razali (2024) found that high, medium and low achiever students' perceived levels of motivation and engagement were high. Students reported that basic elements of their enhanced motivation were the use of visual aids, such as images or pictures, and the fun it offered, which facilitated vocabulary memorization. These findings align with those of Djamdjuri, Thoyib, Retnowati, Furqan & Holifah (2023), Aprilani & Suryaman (2021), and Azizah & Miftakh (2021).

By supporting both collaborative and autonomous learning, Quizlet caters for interpersonal and intrapersonal learners and satisfies



the needs of extrinsically and intrinsically motivated learners. Considering its positive influence on students' beliefs and confidence, as highlighted above, along with the multimodal features it offers and its feasibility/convenience, its contribution to the enhancement of language learners' motivation can be admitted.

Despite the fact that the majority of studies reported the positive impact of Quizlet on vocabulary learning, the findings of a few studies seem to suggest mixed results, raising questions about its generalizable applicability across different learning contexts (Özdemir & Seçkin, 2024). For example, on using Quizlet in their studies, whereas Fursenko, Bystrova & Druz, (2021) described the potential of Quizlet in speaking skills development as a "unique aspect" of their study (p. 125), Senior (2022) and Avisteva & Halimi (2020) found that it had a much lesser impact on productive vocabulary (which accounts for speaking improvement). Another example is Pham's study (2022) in which mixed results concerning how far students were satisfied with the features of Quizlet were reported. Considering that a substantial proportion of students did not actually use Quizlet in his investigation, Platzer (2020) claimed that it is inadequate to assume that learners are inherently motivated with e-learning and technological tools, declaring that teacher intervention is imperative in motivating students to ensure that they benefit from technology-enhanced language learning (p. 434). Since Quizlet allows everyone to create and share study sets, there is no guarantee that the information is accurate (Nguyen, Nguyen, Nguyen, Mai & Le, 2022), thus the teacher's guidance and supervision are inevitable in this regard. In addition to the teacher's crucial role in supporting students' motivation in such environments, other contextual variables may account for these mixed results. In some studies, for example, only the gamified modes of Quizlet were used (e.g. Shadrina, Korneeva & Kabanova, 2024; Senior, 2022; Waluyo & Leal, 2021). Add to this, there are some limitations related to the application itself, as some modes are not supported by smart phones and they operate only on PCs (i.e., Spell, Blast and Live). Also, unstable internet connection may cause distractions or affect the team performance when working in the Live mode (Hamida, Prawati, Hadriana, 2023). Because of these mixed results, research on Quizlet in the language learning classrooms is still emerging, and contextual variables should be carefully considered before releasing any conclusions.

3. Method

This section tackles the design, participants and instruments of the current study as follows.

3.1. Design of the study

This study adopts a mixed research design. A pre/post experimental-control groups test was developed to gather quantitative data, and field notes were collected and analyzed as a source of qualitative data.

3.2. Participants

The participants of the current study were 60 third year, primary stage students who were enrolled in El Salam College Official Language school, El Zatoon, Cairo, in the second semester of the academic year 2023-2024. They were students in two intact classes and were classified into a control and an experimental group. They studied three English Books, i.e., CONNECT Primary 3, CONNECT Plus Student's Book and CONNECT Plus Activity Book.

3.3. Instruments and data collection techniques

3.3.1. The Vocabulary Learning Test

Purpose

The pre/post vocabulary learning test aimed at testing the control and experimental groups students' vocabulary learning before and after the proposed instruction. It was compiled and adapted by the researcher based on CONNECT Plus, primary 3, Student's Book and Activity Book, Term 2.

Description

The vocabulary learning test consists of three types of questions: (a) a word missing some letters and illustrated by a picture. Students are supposed to look at the picture and complete the letters of the word, (b) multiple choice in which students are asked to choose the word that most appropriately fits in a sentence, and (c) a short paragraph missing some words and students are required to fill in these missing words from a list. All the test items were seventeen, which tested students' retention and use of words in the written context of the test.

Piloting the test

Before teaching vocabulary to the control and experiment groups, the vocabulary learning test was administered to a group of (20) students who did not participate in the study. That was done to pilot the test for the following reasons:

- Establish the validity and reliability of the test;



- Determine the appropriate time to answer the questions; and,
- Check the clarity of the questions and the appropriateness of their phrasing.

The timing of the test was determined by calculating the average time spent by all the students who answered all the questions of the test. Forty-five minutes was found to be an appropriate duration for the test.

Internal consistency of test items: the validity of the different subscales of the test was determined through calculating the correlation between the score of each subscale and the overall test score. The correlations between students' overall test scores and their scores in each single skill were calculated. Table (1) shows correlation values.

Table (1): Values of correlations between the score of each test item and the overall test score

Item	Correlation	Item	Correlation
1	0.59**	10	0.61**
2	0.58**	11	0.65**
3	0.62**	12	0.60**
4	0.61**	13	0.64**
5	0.60**	14	0.66**
6	0.59**	15	0.63**
7	0.64**	16	0.67**
8	0.60**	17	0.61**
9	0.59**		

**significant at 0.01 level, where $n = 20$, and the correlation coefficient ≥ 0.56 .

The table above shows that all items are statistically significantly related to the total score, which indicates the internal consistency of the test items and demonstrates a high validity of the test.

Test Reliability

The Cronbach's alpha coefficient was calculated for the test and its value was (0.86), which is a high value and generally indicates the accuracy and reliability of the test as a means of measurement and can therefore be relied upon.

Content Validity

To ensure the accuracy of the test content, a group of EFL experts were consulted regarding the wording of the test items, their clarity, and their relevance to the intended participants. It was concluded that all questions and their phrasing were deemed suitable.

Scoring the test

The test consisted of four questions. The first included five words with missing letters and was assigned five marks: one mark for each correct answer. The second question was a multiple-choice question consisting of ten items, each was assigned one mark for the correct answer. The third and fourth questions were two short paragraphs with missing words, five missing words each. They were assigned one mark for each correct answer. The overall score of the test was twenty-five marks.

3.3.2. The vocabulary motivation questionnaire

Description

The vocabulary motivation questionnaire consists of four areas of motivation, i.e., interest/enjoyment (three statements), self-efficacy/perceived competence (four statements), attitude (four statements), and using resources (four statements). A five-point Likert scale was used to represent five options of students' responses: strongly agree, which was assigned 5 marks; agree, which was assigned 4 marks; neither agree nor disagree, which was assigned 3 marks; disagree, which was assigned 2 marks and strongly disagree, which was assigned 1 mark (see table 2). On administering the questionnaire, it was translated into Arabic to make it easier for the students to respond to its items. They were asked to choose the option that best aligned with their opinions.

Table (2): Number and total score of statements under each motivational construct

Motivational constructs	Number of statements	Total score
Interest/enjoyment	3	10
Self-efficacy (perceived competence)	4	20
Attitude	4	20
Using resources	4	20
All statements	10	70



Piloting the questionnaire

Prior to the use of Quizlet, the vocabulary learning questionnaire was administered to a group of (20) students in the 3rd year, the primary stage. That was done for the following:

(a) Identifying the time required for responding to the questionnaire

The time spent by each student to respond to the questionnaire was registered, then the average time spent by all the students was calculated. Fifteen (15) minutes were found to be an adequate duration.

(b) Establishing internal consistency

Internal consistency of the vocabulary learning questionnaire was determined through:

- **Structural consistency:** In order to determine the accuracy of the questionnaire in reflecting the constructs it aims to measure, the values of correlations between the total score of each construct (motivational area) and the overall score of the questionnaire were calculated as shown in Table (3).

Table (3): The correlations between the score of each construct and the overall score of the questionnaire

Construct	Correlation
Interest/enjoyment	0.7 ^{**}
Self-efficacy (perceived competence)	0.7 ^{**}
Attitude	0.7 ^{**}
Using resources	0.7 ^{**}

**significant at 0.01 level, where n = 20, and the correlation coefficient ≥ 0.56 .

Table (3) shows that all the constructs of the questionnaire are significantly correlated with its overall score, which indicates the validity of its structural consistency.

Internal consistency of the items of the questionnaire

To ensure the internal consistency of the statements included in the questionnaire, the correlations between the score of each statement and the overall score of the questionnaire were calculated as shown in Table (4).

Table (4): The correlations between the score of each item and the overall score of the questionnaire

Item	Correlation	Item	Correlation
1	0.65**	9	0.65**
2	0.67**	10	0.68**
3	0.69**	11	0.67**
4	0.64**	12	0.69**
5	0.68**	13	0.67**
6	0.69**	14	0.67**
7	0.67**	15	0.69**
8	0.61**		

**significant at 0.01 level, where $n = 20$, and the correlation coefficient ≥ 0.56 .

Table (4) shows that all the statements of the questionnaire are significantly correlated with its overall score, which indicates the internal consistency of the items.

(c) The questionnaire reliability

The overall reliability of the questionnaire was calculated using Cronbach's Alpha coefficient, and its value was (0.89), which is high and generally indicates the accuracy and reliability of the questionnaire as a measurement tool, and thus it can be relied upon.

3.3.3. Field notes

Field notes refer to the observations and explanations made by teachers during the Quizlet-based instruction period about points of interest. These notes were meant to capture real-time insights, behaviors or interactions related to students' learning processes and motivations, aiming to understand the cognitive and affective aspects of their learning (e.g. Ramirez-Lizcano & Cabrera-Tovar, 2020; Haghghi, Jafarigohar, khoshsima & Vahdany, 2018; Phillippi & Lauderdale, 2018).

These field notes were written by the two teachers who instructed students in Quizlet. They were kindly asked to take notes of interesting observations during the course period, such as students' engagement and enthusiasm, learning strategies (e.g. how learners used memory strategies, collaborative learning, problem-solving strategies when meeting a challenging word, etc.), motivation indicators, students' interactions and questions, and learning

difficulties or successes. These notes did not follow a structured format and were gathered at the period in which the Quizlet-based instruction was administered, but not necessarily during the Quizlet sessions themselves.

3.4. The Quizlet vocabulary sets

Aim

The aim of the Quizlet vocabulary sets was to develop the experimental group students' vocabulary learning and promote their vocabulary learning motivation. In fulfilling this aim, reinforcing students' memorization and retention of target vocabulary was also sought. This aim was accomplished through the following:

- Assisting students in strengthening their understanding of the target vocabulary via active recall and regular review of the material.
- Enabling students to practice the vocabulary through multiple-choice and short-answer questions.
- Allowing students to take high-quality mock assessments of their vocabulary to identify their strengths and weaknesses.
- Involving students in fast-paced vocabulary games where they compete to match terms with their definitions, explode the most correct answers before the time is up or play collaboratively to master target vocabulary.
- Tracking students' learning and progress.

Description and Content

A Quizlet class was created by the researcher. The class included seven vocabulary sets entitled, "life stages", "inherited traits", "plants", "art", "making art", "health", and "medical instruments". The vocabulary sets were based on CONNECT Plus student's book, 3rd primary, 2nd term. Vocabulary in Theme 3, units 7, 8 and 9 were targeted. Each vocabulary set included the following:

- Double-sided flashcards of each word: one side including the word and the other side including its definition and a clarifying picture.
- Questions of various types (i.e., true/false, multiple choice, matching, writing questions) to test students' knowledge of the vocabulary.
- Different games, to help students practice the learnt vocabulary.

Implementation

After creating the Quizlet vocabulary sets, the experimental group students were invited to join the class with an invitation link. Students were required to register with a Google or Facebook account so that they can use the Quizlet study and game modes and maintain their progress. All the Quizlet-based instruction sessions were carried out in the school's computer lab. Computers, rather than mobile applications, were used for two reasons: First, students were not allowed to attend classes with cell phones; second, the *Live* mode is not enabled in mobile applications.

The teachers' role was essential in the implementation of the Quizlet-based vocabulary instruction, as they tracked students' progress, assigned tasks to groups and noticed the details of the activities (e.g. how many points students got and how long the activities took).

Duration of the Quizlet-based vocabulary instruction

The Quizlet-based vocabulary instruction lasted for (6) weeks in the 2nd semester of the academic year 2023-2024. The experimental group had one introductory session and (7) sessions through Quizlet, about 20 minutes each, focusing on learning the vocabulary for each of the three units. They studied the rest of the sessions conventionally to cover the other language skills and activities included in the units. The control group had (24) sessions in which they received regular instruction in CONNECT Plus 3 in the same weeks.

4. Data Collection and Procedures

The procedures below were followed while conducting the current study:

- The vocabulary learning test and the vocabulary learning questionnaire were administered to two intact classes of 3rd year, primary stage students, who were divided into a control group and an experimental group.
- The results of the pre-test and pre administration of the questionnaire were statistically analyzed to ensure the equivalence of the two groups.
- Prior to teaching each unit, the vocabulary for that unit was taught to the experimental group students through Quizlet, then they were taught the rest of the unit conventionally. The control group students were taught the vocabulary conventionally during their regular English classes.
- The post applications of the test and the questionnaire were conducted.



- The control and experimental groups' pre and post scores of the test and the questionnaire were statistically analyzed to evaluate the effectiveness of Quizlet and measure any changes in the students' motivation levels after the instructional period.

- Findings are discussed and recommendations are stated.

5. Findings of the study

The SPSS (version 25) statistical program was used to analyze the quantitative data of the study and verify the study hypotheses. On the other hand, qualitative analysis of field notes was performed to gain more insights into the findings.

Statistical treatment of the pre applications of the vocabulary learning test and the vocabulary learning questionnaire

T-test for two independent groups was used to analyze the results of the pre applications of the test and the questionnaire to the experimental and control groups. Levene's homogeneity of variance test (F test) was also used, as it is a prerequisite to the use of t-test for two independent groups. Findings are shown in Table (5).

Table (5): Findings of t-test to detect differences between the mean scores of the control and experimental groups students in the pre application of the language learning test and the vocabulary learning questionnaire (where $N_1=N_2=30$ and $df=58$)

Component	Group	mean	Std. Deviation	Levene's Test for Equality of Variances		T test	
				F	Sig.	t- test value	Sig.
Overall score of the vocabulary learning test	Experimental	12.43	5.28	1.584	0.213	0.027	0.979
	control	12.4	4.32				
Interest/enjoyment	Experimental	5.37	1.85	0.223	0.639	-0.403	0.688
	control	5.57	1.99				
Self-efficacy (perceived competence)	Experimental	7.8	2.20	0.000	1.000	0.534	0.595
	control	7.50	2.15				
Attitude	Experimental	10.57	2.82	0.085	0.772	0.980	0.331
	control	9.83	2.97				
Using resources	Experimental	6.33	1.73	0.718	0.400	0.825	0.413
	control	6.73	2.02				

Component	Group	mean	Std. Deviation	Levene's Test for Equality of Variances		T test	
				F	Sig.	t- test value	Sig.
Overall score of vocabulary learning motivation	Experimental	30.07	6.48	0.007	0.932	0.264	0.793
	control	29.63	6.25				

It is evident from the previous table that all the significance level values for the homogeneity of variance test (F) are greater than 0.05, which indicates that the condition of homogeneity between the two independent groups (experimental and control) has been met. Additionally, all significance level values for the t-test for the differences between the experimental and control groups in both the overall score of the vocabulary learning test and the overall score and separate constructs scores of the motivation questionnaire are greater than 0.05, indicating that there are no statistically significant differences between the mean scores of the students in the two groups. This ensures the equivalence of the two groups (experimental and control) prior to the intervention with regard to the vocabulary learning test as well as the motivation questionnaire.

Verifying the first hypothesis

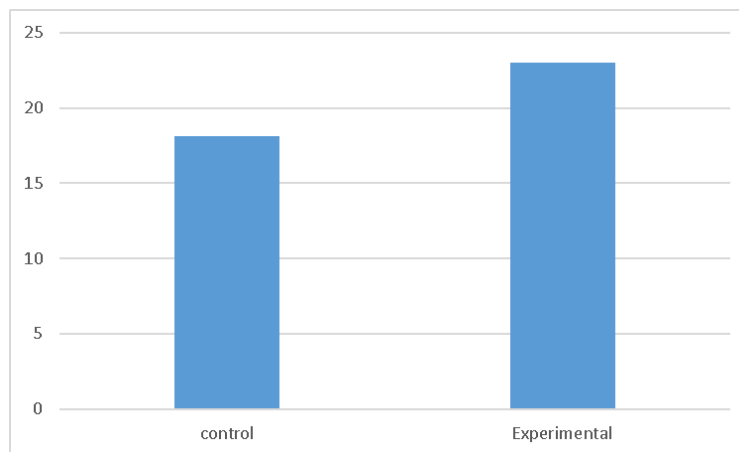
T-test for two independent groups and Levene's homogeneity of variances test (F test) were used to verify the 1st hypothesis which stated that, "There is a statistically significant difference between the mean scores of students in the experimental and control groups in the post-application of the vocabulary learning test as a total score, in favor of the experimental group". Table (6) shows the results.

Table (6): T-test results of the control and experimental groups' mean scores in the post administration of the vocabulary learning test (Where N1=N2=30, and degree of freedom=58).

Component	Group	mean	Std. Deviation	Levene's test for Equality of Variances		T test		Effect size (η^2)
				F	Sig.	t- test value	Sig.	
The overall vocabulary learning score	Experimental	23.03	2.91	0.967	0.329	9.753	0.00	0.725
	control	18.10	2.59					

Table (6) shows that the significance level of F test is greater than 0.05, which means that the control and experimental groups are homogeneous. Also, the experimental group's mean scores in vocabulary learning as a whole are greater than that of the control group regarding the post application of the test, which clarifies that the experimental group students outperformed the control group students in vocabulary learning after being taught through Quizlet. The significance level of t-test is less than 0.01, which indicated that there are statistically significant differences between the mean scores of the two groups in vocabulary learning, in favor of the experimental group at the significance level 0.01, thus the 1st hypothesis is accepted. Figure (1) illustrates the findings.

Figure (1): The mean scores of the control and experimental groups students in the post application of the overall vocabulary learning test



The effect size was calculated using Etta square, through the following formula:

$$\text{Effect size } (\eta^2) = t^2 / (t^2 + df)$$

Where (df) represents the degree of freedom and (t) represents the value of calculated t.

Table (7) shows the referential framework for interpreting the effect size values.

Table (7): The referential framework for interpreting the effect size values.

Effect size value	Interpretation
$(\eta^2) < 0.010$	Weak effect size
$0.059 > (\eta^2) \geq 0.010$	Small effect size
$0.138 > (\eta^2) \geq 0.059$	Medium effect size
$0.232 > (\eta^2) \geq 0.138$	Large effect size
$(\eta^2) \geq 0.232$	Very large effect size

The previous table shows that the effect size value, which was found to be (0.725) is bigger than (0.232), which indicated a very large effect size. That is, using Quizlet had a very large effect in developing the experimental group students' vocabulary learning.

Verifying the second hypothesis

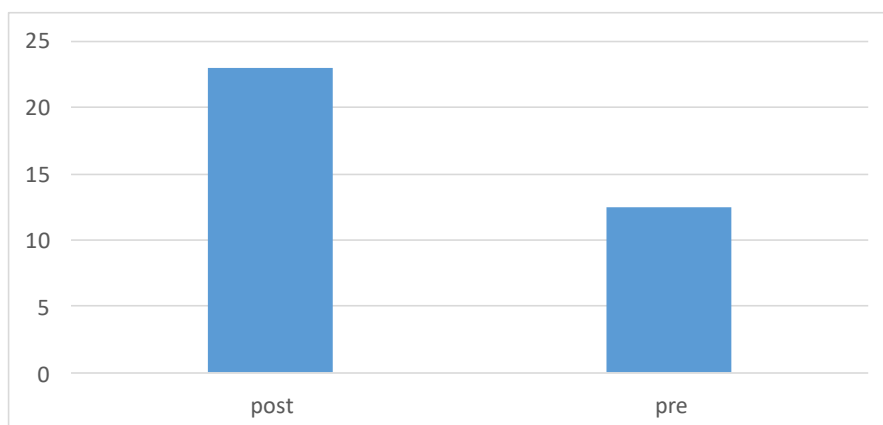
T-test for two dependent groups was used to verify the 2nd hypothesis which stated that, "there is a statistically significant difference between the average scores of the experimental group students in the pre- and post-applications of the vocabulary learning test as a total score, in favor of the post-application". The results are shown in Table (8).

Table (8): T-test results of the experimental group students' mean scores in the pre and post applications of the vocabulary learning test as a whole (N=30 and df=29)

performance	mean		Std. Deviation		t- test value	Sig.
	pre	post	pre	post		
Overall score of vocabulary learning	12,43	23.03	5,28	2,91	11,040	0.00

Table (8) clarifies that the experimental group's mean scores in the post application of the test is bigger than their mean scores in the pre-application, which means that their vocabulary learning developed after using Quizlet. Also, the significance level of t-test is less than 0.01, indicating that there are statistically significant differences between the experimental group's mean scores in the pre and post applications of the test, in favor of the post application, thus, the 2nd hypothesis is accepted. The findings are illustrated in Figure (2).

Figure (2): The experimental group students' mean scores in the pre and post applications of the test as a whole.



Verifying the 3rd hypothesis

To verify the 3rd hypothesis, t-test for two independent groups, as well as F test were used. The 3rd hypothesis states that, “There is a statistically significant difference between the average scores of students in the experimental and control groups in the post-administration of the vocabulary learning motivation questionnaire as a whole and in each motivational construct, in favor of the experimental group”. The results are displayed in Table (9).

Table (9): T-test results of the control and experimental groups' mean scores in the post application of the vocabulary learning questionnaire as a whole and in each motivational construct (Where N1=N2=30, and degree of freedom=58)

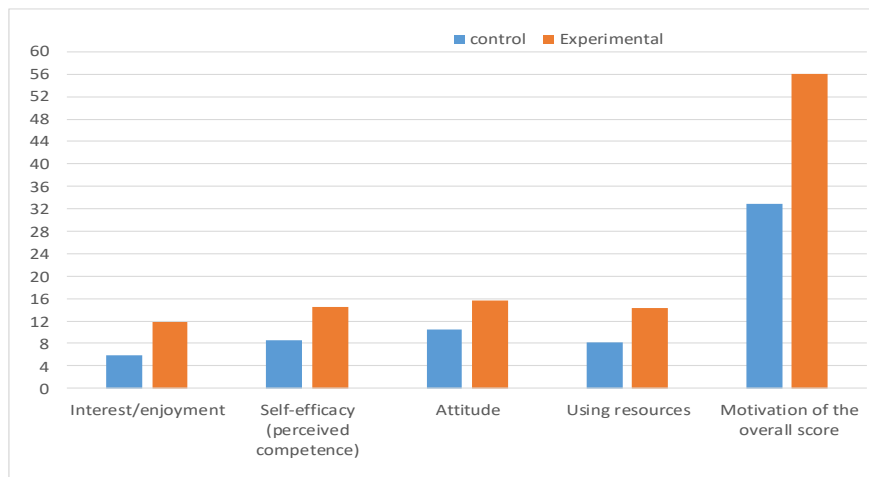
Component	Group	mean	Std. Deviation	Levene's Test for Equality of Variances		T test		Effect size (η^2)
				F	Sig.	t- test value	Sig.	
Interest/enjoyment	Experimental	11.83	2.45	0.085	0.772	11.761	0.000	0.772
	control	5.8	1.37					
Self-efficacy (perceived competence)	Experimental	14.43	4.16	0.010	0.920	7.144	0.000	0.653
	control	8.47	1.91					
Attitude	Experimental	15.57	3.92	1.584	0.213	6.108	0.000	6.108
	control	10.4	2.47					

Component	Group	mean	Std. Deviation	Levene's Test for Equality of Variances		T test		Effect size (η^2)
				F	Sig.	t- test value	Sig.	
Using resources	Experimental	14.27	3.74	0.007	0.932	7.653	0.000	0.67
	control	8.2	2.2					
Overall motivation score	Experimental	56.1	12.07	0.030	0.838	9.415	0.000	0.720
	control	32.87	6.08					

The previous table shows that the significance level of the homogeneity of variances test (F) is greater than 0.05, which means that the control and experimental groups are homogeneous. Besides, the experimental groups' mean scores in the overall score of the vocabulary learning motivation questionnaire, as well as the scores of individual motivational constructs, are higher than those of the control group regarding the post administration of the questionnaire. This indicates that the experimental group students surpassed the control group students in their vocabulary motivation levels after using Quizlet. The significance level of t-test is less than 0.01, thus the 3rd hypothesis is accepted at the significance level (0.01). This is shown in Figure (3).

Figure (3): The control and experimental groups' mean scores in the pre and post applications of the vocabulary learning questionnaire as a whole and in each motivational construct

Table (9) also shows that all values of the effect size are greater than 0.232, indicating an effect size of very large values. This





means that Quizlet had a very large effect on developing the experimental group students' motivation levels as a whole and in each motivational construct.

Verifying the 4th hypothesis

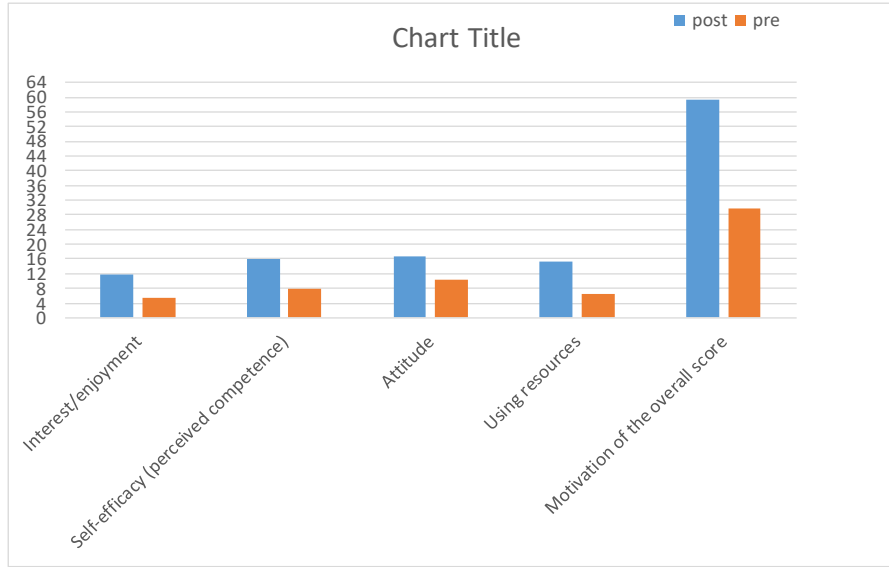
T-test for two dependent groups was used to verify the 4th hypothesis, which stated that, "There is a statistically significant difference between the average scores of the experimental group students in the pre- and post-administrations of the motivation questionnaire as a whole and in each motivational construct, in favor of the post-administration". Table (10) shows the findings.

Table (10): T-test results of the experimental group's mean scores in the pre and post applications of the vocabulary learning motivation questionnaire as a whole and in each motivational construct (N=30, df=29)

performance	mean		Std. Deviation		t- test value	Sig.
	pre	post	pre	post		
Interest/enjoyment	5.4	11.83	1.85	2.47	10.965	0.00
Self-efficacy (perceived competence)	7.77	15.93	2.22	4.16	8.426	0.00
Attitude	10.3	16.57	2.87	3.92	5.923	0.00
Using resources	6.37	15.39	1.73	3.74	10.880	0.00
Motivation of the overall score	29.83	59.40	6.53	12.31	11.036	0.00

Table (10) shows that the experimental group's mean scores in the post application of the motivation questionnaire are greater than their mean scores in the pre-application both in their overall motivation and in each separate motivational area. This means that their vocabulary learning motivation rose after using Quizlet. The significance level of t-test is less than 0.01, indicating statistically significant differences in their mean scores, favoring the post application of the questionnaire, at the significance level 0.01, thus the 4th hypothesis is accepted. Figure (4) illustrates the findings.

Figure (4): The experimental group's mean scores in the pre and post applications of the vocabulary learning motivation questionnaire as a whole and in each motivational area



Measuring the effectiveness of the Quizlet-based instruction in enhancing vocabulary learning and motivation

Although the effect size in the previous tables is very large, indicating that the use of Quizlet has a very large effect on enhancing the experimental group students' vocabulary learning and motivation, both as an overall score and in each motivational construct, the corrected gain ratio by Ezzat (Ezzat Abdel Hamid, 2013, p. 28)² was used to measure and determine the effectiveness value of using Quizlet, following the formula below:

$$CEG_{ratio} = \frac{M_2 - M_1}{P - M_1} + \frac{M_2 - M_1}{P} + \frac{M_2 - M_1}{M_2}$$

Where, CEG_{ratio} = Corrected gain ratio

M_1 = Pre-test/questionnaire mean score

M_2 = Post test/questionnaire mean score

P = Maximum test/questionnaire score

² عزت عبد الحميد حسن (٢٠١٣): تصحيح نسبة الكسب المعدلة ل بلاك (نسبة الكسب المصححة ل عزت، المجلة المصرية للدراسات النفسية، مجلد (٢٣)، العدد (٧٩)، ص ص ٢١ - ٣٧.



Table (11): The referential structure for interpreting the corrected gain ratio values

Corrected gain ratio (CEG _{ratio})	Interpretation
$CEG_{ratio} < 1.5$	The intervention is ineffective
$1.5 > CEG_{ratio} > 1.8$	The intervention is of medium effectiveness
$CEG_{ratio} \geq 1.8$	The intervention is acceptable or effective

The following table (Table 12) shows the values of Ezzat's corrected gain ratio

Table (12): The experimental group's mean scores in the pre and post applications of the vocabulary learning test and the vocabulary learning motivation questionnaire and the corrected gain ratio values

Skill	Full Mark	Mean scores		Ezat correct Gain Ratio	significance
		Pre M ₁	Post M ₂		
vocabulary learning of the overall score	٢٥	12.43	23.03	١,٧٣	Medium effectiveness
Motivation of the overall score	٧٥	29.83	59.40	١,٥٤	Medium effectiveness

As table (12) shows, the corrected gain ratio value for enhancing both vocabulary learning and motivation among third-grade students falls between 1.5 and 1.8. This indicates that the use of Quizlet is moderately effective in improving the experimental group's vocabulary learning and motivation. Thus, the study question which asked, "What is the effectiveness of Quizlet in enhancing the students' vocabulary learning and motivation?" is answered.

6. Discussion

6.1. Discussion of the statistical findings

The statistical treatment and analysis of quantitative data revealed the positive effect of Quizlet on developing the 3rd grade, primary stage students' vocabulary and enhancing their motivation for vocabulary learning. That was evident through the statistically significant differences in the experimental group's vocabulary learning and motivation after using Quizlet, compared to the control group's performance and motivation. These findings may be attributed to three main aspects: students' engagement, gamified learning and the teacher's role.

Students' engagement was promoted through the interactive activities of Quizlet, as represented by the various learning modes that helped learners stay focused, motivated and involved in vocabulary learning. Features such as personalization, collaboration and instant feedback increased students' involvement. According to Wang, Huang & Hsu (2015), task engagement comprises students' attention, participation and interaction, which were all provided and elevated while using Quizlet, and consequently, led to better vocabulary learning and higher motivation levels.

Gamified learning, on the other hand, is a very influential feature offered by Quizlet. It helps make learning more dynamic and appealing to students. Moreover, it provides for an enjoyable, anxiety-reduced learning experience in which students can learn and practice vocabulary without feeling pressurized or cognitively loaded. Some researchers who utilized Quizlet in their studies solely depended on this feature to enhance their students' vocabulary knowledge, thus suggesting that game-based learning can significantly boost motivation and retention (e.g. Kayra, 2024; He, Wen & Yang, 2023; Makhovych, 2023; Sadeghi, Saglik, Mede, Samur & Comert, 2022; Waluyo & Leal, 2021).

Furthermore, the teacher's role is essential to the success of Quizlet-based vocabulary instruction. In the current study, teachers guided the students' learning through Quizlet by providing instructions, directing their next steps, and ensuring they stayed focused. This support helped both teachers and students overcome some of the disadvantages of Quizlet, such as the potential inaccuracy of content. Although Quizlet can be independently used by learners and has been documented to enhance autonomous learning (Nguyen, Nguyen, Nguyen, Mai, Le, & Dao, 2022), it should be cautiously used with young learners at the primary stage. This is because young learners may not yet have developed the self-management skills necessary to create or select appropriate content for their learning, or they may get distracted by other sites and lose control of time, and therefore, they need guidance from the teacher. This claim is supported by the findings of Nguyen & Le's (2022) study, in which the in-class group had better posttest scores compared to the at-home group. One reason for this finding may be the role of the teacher, with the in-class group, to generate and sustain students' motivation in an engaging environment (Hennebry-Leung & Lamb, 2024).

Although Quizlet was found to have a very large effect size on the experimental group students' vocabulary learning and motivation,

medium effectiveness of the application was statistically detected, which indicates that it played a valuable role in enhancing vocabulary learning and motivation, providing a solid foundation for students' progress. With additional support or complementary approaches, its positive impact can be further amplified for even greater success. This medium effectiveness may be due to the relatively short period during which Quizlet was used. The students had seven Quizlet sessions, but they needed to learn a considerable number of words in each session. Perhaps the large number of words negatively affected their retention and practice opportunities.

The findings of the current study are in agreement with those of Hamida, Prawati & Hadriana (2023), Tran & Le (2023), and Toy & Buyukkarci (2019), who concluded that Quizlet increased learners' vocabulary achievement, raised their vocabulary learning motivation and enhanced both students' and teachers' perceptions of its use for vocabulary learning.

6.2. Discussion of qualitative data: Reflections on some field notes

The field notes gathered and reported by the two teachers who taught the Quizlet sessions revolved around two main dimensions: the challenges met by the students while learning the target vocabulary and indicators of students' motivation and enthusiasm to engage in vocabulary learning.

During the field notes, the experimental group students' challenges in vocabulary learning were detected and reported by the two teachers. It was noticed that the students considered some words challenging for one or more of the following reasons:

First, the pronunciations of some words are confusing. For example, when students studied the two words "species" and "ancient", they learnt that the "ci" are pronounced /ʃ/. However, when they studied the word "medicine" the rule was not applied and the teachers reported that. Another example was the words "bandage", and "surgery" where almost all students pronounced the "g" as /ʒ/, probably because the sound /dʒ/ does not exist in the Arabic language. The word "sculpture" was also problematic, due to the constant clusters in the beginning and the middle of the word. Since constant clusters do not exist in initial and middle syllables of Arabic, students tended to break up the word by adding shwas. Moreover, the word "tomb" was difficult to recognize because of the silent "b".

Second, the length of some words did not allow students to remember and retain these words easily. Examples of these words were “characteristics”, “instruments” and “stethoscope”, where students mostly remembered only the first syllable of each word. The teachers reported that the students needed more practice and drills on such words.

Third, the depth of some words was also a problem for some students. Some of them could not fully understand the meaning of “abstract”, “fine” and “realistic” art, for example.

Finally, some words had unfamiliar combinations of letters for some students, thereby they could not retain them easily. Examples include “drought”, “pitcher”, “museum”, and “treasure”.

As for the indicators of vocabulary learning motivation, the following aspects were reported.

Asking questions: When studying the word “characteristics”, Anas claimed that it must be the longest word in English. His classmates did not agree, and they asked the teacher about the longest word in English. She suggested googling it, and immediately all the students started googling and they found the word, “Supercalifragilisticexpialidocious”. Interestingly, they found a YouTube song containing the word and they played it and watched curiously, which indicated their interest and engagement.

Developing vocabulary learning strategies: One example of the students' use of vocabulary learning strategies to manage their vocabulary learning was when Adam used the word “take” as a substitute for the word “inherit” in the sentence “Children take traits from their parents”, because “inherit” was difficult to him to remember, which is a problem-solving strategy. Another noteworthy detail was when Ahmed suggested a mnemonic strategy to help him remember the word “offspring”, as he told the teacher that *baby flowers* are born in spring, and *off* can be the babies of the spring. Moreover, another student suggested dividing the word “survival” into three parts writing each part with a different color. These remarks shed light on the students' trials to activate their memories and solve their learning problems through developing vocabulary strategies that can aid their vocabulary retention and use, even if they may not be aware of this strategy development.

Initiating learning: While joining the Quizlet site, Aser noticed a Quizlet class other than the target one and decided to explore it. When the teacher realized he was not following the same Quizlet class as his classmates did, Aser explained that he was interested in



the former because it included a vocabulary set related to a lesson that he did not fully understand in *Discover*, a multidisciplinary Student Book they studied. This shows how Aser was motivated to learn that set of vocabulary through Quizlet and how his motivation encouraged him to initiate self-learning without being asked to do so.

Relating learning to authentic life: Another indicator of motivation is when students establish a link between their English vocabulary use and their daily lives. This was evident when Omar asked the teacher about the English words for *mahshi* and *basbousa* (stuffed cabbage and semolina cake), because his mother had prepared them for lunch! That was an example of how he was motivated to learn new English words that he could use in real life.

The previous qualitative discussion revealed some important themes related to students' vocabulary learning challenges, which can be summarized in the length and depth of some words, unfamiliar constant clusters or combinations of letters and pronunciation/ spelling discrepancies. On the other hand, the discussion also highlighted significant indicators of vocabulary learning motivation demonstrated by the experimental group students' questions, vocabulary learning strategies, initiation of vocabulary self-learning and interest to relate vocabulary to authentic life situations, which features Quizlet's potential as a successful tool for enhancing EFL vocabulary learning and motivation.

7. Conclusion

The widely spread use of smartphones and laptops has urged the emergence of innovative and unfamiliar learning and teaching styles. Students' daily use of these technological devices has made them a part of students' lives, imposing themselves on their daily practices. Incorporating these technological devices and their applications into language learning familiarizes students with the language and motivates them to practice the language without feeling pressurized or loaded. Using applications such as Quizlet affects emotional and cognitive engagement during vocabulary learning, promoting both the motivational impact and the depth of vocabulary processing. Even when only receptive vocabulary is targeted, transferring this vocabulary to communicative and authentic life situations can promote its productive use. Quizlet can also offer differentiated instruction that can be tailored to meet the needs of students with different proficiency levels, learning styles, or special

needs. The gamification elements it includes elevate students' motivation and positively influences their language learning beliefs. A point of concern, however, is related to the essential role of the teacher in facilitating students' learning through using these technological tools. It is claimed that young learners need guidance in managing their learning and developing their self-regulation skills, so as to avoid the potential drawbacks of these tools, such as inaccuracy of content or poor time management.

8. Recommendations

Based on the findings of the study, the following can be recommended:

- Mobile and computer applications should be purposefully incorporated and used in EFL curricula at the primary stage, for they have the potential to enhance students' learning and increase their language learning motivation.
- The teacher's role should be stressed when such technological tools are applied, for teachers are supposed to guide students to monitor their progress and manage their self-regulation skills.
- Gamified learning is highly effective in EFL learning and has a positive impact on students' language achievement, perceptions and motivation. Thus, it should be given due attention when designing EFL curricula or selecting EFL instructional strategies.
- Teachers should consider using interactive applications, such as Quizlet, when teaching primary stage students, as these applications provide a dynamic learning environment which fosters and sustains students' motivation.

9. Suggestions for further research

- Researchers may investigate the impact of Quizlet on other language skills in the Egyptian context, such as listening, reading comprehension or grammar acquisition.
- The effect of Quizlet can also be investigated when used by older students in other educational stages.
- Researchers may examine the effectiveness of integrating Quizlet with traditional vocabulary learning strategies, such as using word lists and flashcards, or with other memory strategies.
- Researchers may conduct a comparative analysis of digital tools, comparing the effectiveness of Quizlet to other applications such as Kahoot or Duolingo, in developing EFL students' vocabulary and motivation.



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