

University Students' Perceptions on Using Quizlet Digital Flashcards to Learn English Vocabulary

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Abstract

English vocabulary is a fundamental component of language proficiency, yet many university students find conventional memorization methods ineffective and demotivating. The rise of digital learning tools, such as Quizlet, has introduced new possibilities for engaging vocabulary instruction; however, research specifically examining university students' perceptions of Quizlet in the EFL context remains limited. This study aims to investigate how university students perceive the use of Quizlet digital flashcards to learn English vocabulary and to identify the vocabulary learning strategies they employ through the application. A qualitative research design was adopted, with data collected from 20 English Education university students (Semester 8) at a university in Semarang through a 20-item closed-ended Likert-scale questionnaire and semi-structured interviews with three purposively selected participants. Data were analyzed using the Miles and Huberman qualitative data analysis model and interpreted through Davis's (1989) Technology Acceptance Model (TAM) and Schmitt's (1997) Vocabulary Learning Strategies (VLS) framework. The findings reveal that students hold highly positive perceptions of Quizlet's system design, ease of use, usefulness, and attitude toward use; however, a significant attitude-behavior gap was identified, as many students do not use Quizlet regularly despite their favorable perceptions. Regarding vocabulary learning strategies, students actively employ determination, social, and memory strategies, with flashcard-based long-term retention receiving the strongest endorsement. Cognitive strategies involving multi-modal practice were also evident, while metacognitive strategy use revealed high self-evaluation but low proactive study planning. These findings suggest that Quizlet is a promising supplementary EFL vocabulary learning tool, most effective when integrated into structured, instructor-guided pedagogical activities.

Keywords: Quizlet digital flashcards; English vocabulary learning EFL; Technology Acceptance Model; Vocabulary Learning Strategies; university students.

INTRODUCTION

In learning English, vocabulary is as important as other skills such as speaking, listening, reading, and writing (Al-Jiboury, 2024; Nation, 2022; Rahman & Suryanto, 2022; Tran, 2023). Vocabulary is one of the most important aspects for English as a Foreign Language (EFL) learners, especially university students (Susanto, 2021). A limited vocabulary makes it difficult for university students to understand academic material, communicate and discuss in class, and develop productive skills such as speaking and writing. Improving English vocabulary mastery is an important goal of learning English in higher education (Purwanto & Hidayad, 2022).

In this context, many students view the process of learning English vocabulary as boring because it largely revolves around tedious memorization and requires a lot of time to understand (Laoli et al., 2025). Learning activities undertaken by university students often lack the motivation to strengthen English vocabulary mastery, such as checking words in a dictionary and memorizing them, which has been proven ineffective for long-term retention (Nation, 2001). Therefore, university students require a more engaging, innovative, and

relevant vocabulary learning approach to learning habits in the digital era (Haque et al., 2024; Hidayah et al., 2025; Istiqomah & Sopian, 2025). With technological advancements in education, the use of digital learning media has become increasingly significant in the EFL context. Vocabulary enhancement through technology-enabled learning media has been shown to increase student motivation and engagement during English language learning (Grogan et al., 2018). This technology-based learning media also provides many benefits and good opportunities for English learners, such as getting direct feedback, being able to practice vocabulary repeatedly and without limits, and being able to access learning materials anywhere and anytime.

In this era of increasingly advanced technology, several sophisticated learning media have emerged and are widely used by the public. This is due to their ease of use for the current generation, especially for learning English vocabulary. One of the many advanced technologies used by today's society is the digital flashcard application. Flashcards have been used and proven effective as an efficient and enjoyable learning medium for learning English vocabulary because they introduce engaging visuals of vocabulary that can be used repeatedly for meaningful learning. Along with technological developments, traditional flashcards have evolved into digital flashcards. Digital flashcards have evolved to become more user-friendly and easy to use anytime. Digital flashcards offer several attractive features for everyone to enjoy, such as gamification elements, images, audio pronunciations, and interactive quizzes, which can help learners learn English vocabulary more enjoyably and efficiently (Waluyo & Bucol, 2021).

One technology-based learning application widely used in English learning is Quizlet. Quizlet is a digital flashcard application widely used in English vocabulary learning. This application has attracted a lot of attention from English as a Foreign Language (EFL) learners, especially university students. This application offers a variety of creative and engaging learning methods for university students, such as matching games, flashcards, and quizzes, allowing university students to learn and acquire vocabulary easily both in and outside the classroom. Its use as an English learning application can play a significant role in helping to significantly increase student enthusiasm and motivation to learn by providing a fun learning environment (Hikmah, 2019).

University students often experience difficulty memorizing English vocabulary. This is due to a lack of learning media. Several studies have shown that the use of Quizlet flashcards has had a positive impact on university students' English vocabulary learning (Tanjung & Daulay, 2022). However, several previous studies have noted that the use of Quizlet flashcards is still relatively limited in educational contexts, with most research focused on and conducted in secondary education contexts. Research specifically addressing university students' perceptions of the use of Quizlet as a vocabulary learning medium, specifically digital flashcards, is still relatively limited. In this regard, university students' perceptions are a crucial factor in the success of today's learning technology, as positive student perceptions of the benefits and ease of use of an application will encourage continued technology use (Okkan & Aydin, 2020).

The novelty of this research lies in its integrated analytical framework that combines Davis's (1989) Technology Acceptance Model (TAM) and Schmitt's (1997) Vocabulary Learning Strategies (VLS) framework to provide a comprehensive understanding of university

students' perceptions and strategic engagement with Quizlet. Unlike previous studies that focused primarily on either acceptance or strategy use in isolation, this research examines both dimensions simultaneously. Additionally, this study specifically targets eighth-semester university students who have had extended exposure to Quizlet, providing insights into sustained use rather than initial adoption. The research also addresses the attitude-behavior gap in educational technology adoption, an area that has received limited attention in vocabulary learning research.

This situation suggests the need for further research on a broader scale, such as university students' perceptions. This study will explore university students' perceptions of the effectiveness of using Quizlet, particularly in improving their English vocabulary skills. The purpose of this study is to determine the ease and benefits perceived by university students, as well as the obstacles encountered during the learning process using Quizlet. The results of this study are expected to provide valuable insights for EFL learners who want to improve their English vocabulary, supported by technology that is good for university students.

RESEARCH METHODS

This research was conducted using a qualitative research approach. Qualitative research is a type of research or investigation that is naturalistic and deals with non-numerical data. This research seeks to explore and understand, rather than explain or manipulate variables (Nassaji, 2020). This research method aims to clearly understand the direct experiences or events experienced by participants. This research method was conducted comprehensively by gaining a thorough understanding of participants' perceptions. This research method aims to obtain a clear picture of participants' perceptions regarding the use of Quizlet digital flashcards.

The participants selected for this study were university students from the English Language Education study program at a university located in Semarang. The participating university students were selected using a purposive sampling technique. Purposive sampling technique is a technique which is a form of non-probability sampling, in this case where researchers rely on their own judgment when selecting members of the population to participate in their research, especially when they want to access a specific sub-set of people who are suitable for their research (Foley, 2018). In this study, university students who met the criteria were selected as research participants using the aforementioned technique. The purposive sampling technique used in this study was used with the criteria that participants were university students who had experience and had used the Quizlet Flashcard application as a learning medium for learning English vocabulary. This participant selection aimed to ensure that the data collected came from respondents who met these criteria, namely respondents who had direct understanding and experience related to the use of the Quizlet application to avoid data errors. The use of this technique is expected to produce in-depth, relevant data, and in accordance with the research objectives in explaining university students' perceptions of the use of Quizlet in their English vocabulary learning.

The data for this study were collected through a closed-ended questionnaire and semi-structured interview. By using these two data collection techniques, this study aims to determine university students' perceptions of using Quizlet. This closed-ended questionnaire is used to obtain a general and systematic overview of university students' perceptions. The

questionnaire was distributed to university students via Google Forms. The questionnaire will consist of statements on a five-point Likert scale ranging from strongly agree to strongly disagree. Questions in the questionnaire will cover several important aspects, such as ease of use of Quizlet Flashcards, learning strategies during use, and obstacles experienced during the learning process. This questionnaire will be given to all participants and can be completed online. In addition to the questionnaire, semi-structured interviews will be conducted to gather more in-depth data regarding university students' views on using Quizlet Flashcards. These interviews will be conducted with several students purposively selected from the questionnaire respondents. These interviews will be conducted either face-to-face or online and will be recorded with the participants' permission. Data obtained from questionnaires and interviews were analyzed using the Miles and Huberman qualitative data analysis model. The data analysis process involved three main stages: data reduction, data presentation, and verification or drawing conclusions. In the first stage, namely the data reduction stage, here the researcher will simplify, select, and focus the data obtained from the questionnaire results and interview transcripts by identifying data relevant to the research objectives. Data from the questionnaire results will be analyzed descriptively, this is to describe the perceptions of university students, while data from interviews will be used to deepen understanding of student experiences and views in using Quizlet digital flashcards. Next is the data presentation. In the data presentation, the data that has been selected by the researcher will be presented in the form of descriptive tables, accompanied by summaries and then grouped according to themes or consistent patterns from the interview results. This data presentation makes it easier to identify relationships or patterns between categories that emerge during the analysis of student perceptions of the use of Quizlet digital flashcards. The final step is verification and drawing conclusions. At this stage, researchers will identify key findings, interpret the meaning of the data, and draw conclusions based on themes and patterns that emerge periodically and consistently. This process involves comparing the results from the questionnaire and interviews to enhance the credibility of the research findings.

The use of closed-ended questionnaires and semi-structured interviews, as well as the application of the Miles and Huberman analysis model, is expected to increase the credibility and depth of research findings and provide a clear picture of university students' perceptions of the use of Quizlet digital flashcards in learning English vocabulary.

RESULTS AND DISCUSSION

This section presents and discusses the findings of the study, which was designed to investigate university students' perceptions of using Quizlet digital flashcards to learn English vocabulary. Data were collected through a closed-ended questionnaire distributed to 20 university students enrolled in the English Education study program (Semester 8) at a university in Semarang. All 20 participants (100%) confirmed prior experience using Quizlet for English vocabulary learning, making them well-positioned to respond to the questionnaire items.

The questionnaire comprised 20 items measured on a five-point Likert scale (1=Strongly Disagree to 5 = Strongly Agree), organized into four dimensions based on two theoretical frameworks: Davis's (1989) Technology Acceptance Model (TAM) and Schmitt's (1997) Vocabulary Learning Strategies (VLS). Each sub-dimension is discussed separately

below, supported by data from the semi-structured interviews.

Students' Perceptions of Quizlet Based on the Technology Acceptance Model (TAM)

Davis's (1989) Technology Acceptance Model (TAM) is a theory that explains how users accept and use new technologies based on two main factors. These two main factors are perceived usefulness the degree to which a user believes using a technology will improve their job performance and perceived ease of use the degree to which a person believes using a technology will be effortless or easy to use. In this study, the TAM was expanded to also include system design and features, attitudes toward use, and actual system use, providing a comprehensive picture of university students' perceptions and engagement with Quizlet.

System Design and Features (Items 1–2)

The first sub-dimension examines university students' perceptions of Quizlet's overall system design and its built-in features, namely flashcards, games, and quizzes. System design and features refer to the visual layout, navigational structure, and interactive elements of a digital platform that collectively shape the user's first impression and sustained experience. Items 1 and 2 addressed these aspects, as presented in Table 1.

Table 1. University Students' Perceptions of Quizlet's System Design and Features (Items 1–2)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
1	The features in Quizlet (flashcards, games, quizzes) are designed to be engaging for vocabulary learning	1(5%)	0(0%)	0(0%)	11(55%)	8(40%)
2	Quizlet's layout and design make it easy for me to learn English vocabulary	0(0%)	1(5%)	1(5%)	12 (60%)	6 (30%)

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20

As shown in Table 1, university students responded very positively to both items concerning Quizlet's system design and features. For Item 1, which assessed whether Quizlet's features including flashcards, games, and quizzes are engaging for vocabulary learning, 95% of respondents agreed (55%) or strongly agreed (40%). Only one university student (5%) strongly disagreed, which may reflect individual differences in learning style preferences. These findings indicate that Quizlet's feature set is highly suitable for university students. Quizlet's wide variety of features, from flashcards to active game-based exercises, caters to university students' learning preferences and provides multiple avenues for vocabulary engagement.

For Item 2, which focused on whether Quizlet's layout and design facilitate vocabulary learning, 90% of university students agreed (60%) or strongly agreed (30%). Only one university student (5%) disagreed, while one university student (5%) was neutral. This high level of agreement indicates that university students find Quizlet's layout and design engaging and that it helps them focus their visual resources on engaging vocabulary content for English vocabulary learning.

The interview data corroborated the questionnaire results. Participants stated that their experience with Quizlet's features was very positive and appreciated the platform's variety and interactivity.

Participant 1 (P1):

"Oh yes, Quizlet has flashcard games and quizzes, and those are full of vocabulary that I can learn something from in an interesting way."

Participant 2 (P2):

"I think the features available on Quizlet make vocabulary learning more interesting and interactive. The flashcards help me memorize words and their meanings in a simple way, while the games make the learning process feel less boring. The quiz feature is also useful because it allows me to test whether I really understand the vocabulary I have studied."

Participant 3 (P3):

"I think the variety of features like flashcards, games, and quizzes is the strongest point of Quizlet. It transforms vocabulary learning from a boring memorization task into something interactive. The Match game, for instance, adds a competitive edge that makes me more engaged and less likely to get bored."

These responses suggest that Quizlet's diverse and gamified feature set is a key component of university student engagement and demonstrate that elements within Quizlet significantly enhance university students' learning motivation.

Perceived Ease of Use (Items 3–4)

Perceived ease of use is one of two core constructs in Davis's (1989) TAM framework. It refers to the degree to which a person believes that interacting with a particular system is easy to use and requires minimal effort. When perceived ease of use is high, users are more likely to adopt and maintain technology use over time. Items 3 and 4 measure this construct in the context of Quizlet, as shown in Table 2.

Table 2. University Students' Perceived Ease of Use of Quizlet (Items 3–4)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
3	Quizlet is easy to use to learn English vocabulary	1(5%)	0(0%)	1(5%)	10(50%)	8(40%)
4	I can understand how to use Quizlet without difficulty	1(5%)	0(0%)	2(10%)	9(45%)	8(40%)

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20.

Table 2 presents university students' perceptions of Quizlet's ease of use. For Item 3, which asked whether Quizlet was easy to use for vocabulary learning, 90% of university students agreed (50%) or strongly agreed (40%), with only one university student (5%) strongly disagreeing. Item 4, which assessed whether students could understand how to use Quizlet without difficulty, yielded similarly strong results: 85% agreed (45%) or strongly agreed (40%), with only one university student disagreeing and two remaining neutral.

These results confirm that most university students find Quizlet to be an easily accessible and effortless tool. Quizlet's simple interface and engaging learning model featuring interactive game activities and clear study modes appear to be well-suited to the target population. Quizlet's user-friendly and user-friendly design is also a key factor contributing to its acceptance among university students.

Interview data further supports university students' perceptions of Quizlet's ease of use. Participants described their experiences using Quizlet as smooth and accessible.

Participant 1 (P1):

"I was first experiencing it when I was still in high school with my teacher, so when I

found difficulty, I asked the teacher to teach me how to use it."

Participant 2 (P2):

"My first experience using Quizlet was quite positive. After exploring it for a few minutes I found it quite easy to understand. The interface is simple, so I could easily find the flashcards and other study modes. Navigating between the different features was not difficult for me. Overall, I felt that Quizlet was very user-friendly for studying English vocabulary."

Participant 3 (P3):

"My first experience was quite smooth. The interface is very intuitive, so I did not need a tutorial to start. I find it very easy to navigate, especially when creating my own study sets or searching for existing ones. It is user-friendly for anyone looking to focus on English vocabulary without technical distractions."

These interview results and responses indicate that Quizlet's interface is easily accessible even to first-time users with minimal guidance from a lecturer's initial assistance or navigating the application independently within minutes. The consistent emphasis on simplicity and intuitiveness among participants reflects Davis (1989) perceived ease-of-use construct that Quizlet's user-friendly design is an important factor in its acceptance among EFL students.

Perceived Usefulness (Items 5–6)

Perceived usefulness, the second core construct of TAM, refers to the degree to which a user believes that using a technology will improve their performance or learning outcomes (Davis, 1989). In the vocabulary learning context, this translates to university students' beliefs about whether Quizlet concretely helps them learn and understand English vocabulary more effectively. Items 5 and 6 examined this construct, as presented in Table 3.

Table 3. University Students' Perceived Usefulness of Quizlet (Items 5–6)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
5	Quizlet helps me learn English vocabulary more effectively	0(0%)	0(0%)	4(20%)	12(60%)	4(20%)
6	Quizlet has improved my understanding of English vocabulary	0(0%)	0(0%)	4(20%)	13(65%)	3(15%)

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20.

Table 3 reveals the strongest positive consensus across the TAM dimensions. For Item 5, 80% of university students agreed (60%) or strongly agreed (20%) that Quizlet helped them learn vocabulary more effectively, while no university students disagreed. The 20% neutral response rate suggests that some university students may view Quizlet as a useful supplementary tool rather than a transformative tool, which is a fairly nuanced and positive stance. For Item 6, 80% agreed (65%) or strongly agreed (15%) that Quizlet had improved their vocabulary comprehension, and again, no university students disagreed. The absence of negative responses on these two items represents the strongest and most consistent result across the entire questionnaire.

High perceived usefulness scores have significant implications. When university students believe a tool has significantly improved their vocabulary performance, they are more likely to develop continued intentions to use it in the future. The 20% neutral rate on both

items is also noteworthy, as it may indicate that for some university students, Quizlet's effectiveness is perceived as conditional dependent on consistent and frequent use rather than occasional access.

Interview results regarding perceived usability indicated that participants reported a marked increase in their English vocabulary knowledge as a result of using Quizlet.

Participant 1 (P1):

"It was games full of vocabulary, so I know more about, I gained more vocabulary. But no, I am still using it."

Participant 2 (P2):

"Using Quizlet has helped improve my English vocabulary. By repeatedly reviewing the flashcards and practicing through quizzes, I can remember words more easily. Since using Quizlet, I have noticed that I can recognize and understand more vocabulary when reading English texts."

Participant 3 (P3):

"Using Quizlet has definitely had a positive impact. I have noticed significant progress in how quickly I can recall words. Because it uses visual and auditory cues, the words stick in my mind much longer compared to just reading a list from a textbook."

The interview results revealed a variety of responses regarding how university students perceived the usefulness of Quizlet. P1 described general vocabulary improvement, while P2 and P3 described more specific benefits such as improved reading recognition (P2) and faster word recall through multimodal cues (P3). This indicates the absence of negative responses from university students, corroborating Sanosi (2018) finding that Quizlet use leads to measurable vocabulary improvement.

Attitude Toward Using (Items 7–8)

Attitude toward use refers to a learner's overall evaluation of a technology—whether they feel positively or negatively toward using the technology (Davis, 1989). In language learning, positive attitudes are closely related to motivation, enjoyment, and willingness to invest in practice effort. Items 7 and 8 explore students' attitudes toward using Quizlet, as shown in Table 4.

Table 4. University Students' Attitude Toward Using Quizlet (Items 7–8)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
7	I have a positive attitude toward the use of Quizlet in English language learning	1(5%)	0(0%)	1(5%)	13(65%)	5(25%)
8	I enjoy using Quizlet to learn English vocabulary	1(5%)	0(0%)	1(5%)	10(50%)	8(40%)

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20.

Table 4 shows that university students have very positive attitudes toward using Quizlet. For Item 7, which directly assessed whether university students have a positive attitude toward Quizlet in English learning, 90% agreed (65%) or strongly agreed (25%). Only one university student (5%) strongly disagreed, and one (5%) remained neutral. Item 8 measured enjoyment in using Quizlet, and the results were similarly positive: 90% agreed (50%) or strongly agreed (40%). High levels of enjoyment are highly significant from a language learning perspective.

Enjoyment in use is defined as a critical affective variable in language acquisition. It is demonstrated when learners enjoy the learning process. Quizlet elements such as quizzes, competitive games, and collaborative learning features can foster positive affective states in learners. The small percentage of university students who disagreed (5%) or remained neutral may reflect learners who prefer traditional learning approaches, perceiving digital games as distractions rather than learning.

Interview results showed that participants expressed positive attitudes towards using Quizlet, with enjoyment emerging as a major theme.

Participant 1 (P1):

"What I find enjoyable is the experience of learning using a game, so I have fun, because it was a game, and learning using games makes it more enjoyable for me."

Participant 2 (P2):

"I generally enjoy using Quizlet as a vocabulary learning tool. The application makes learning more interesting compared to traditional memorization from a notebook. The games and different practice modes keep me motivated to continue studying. However, sometimes it can feel repetitive if I study the same set of words too often."

Participant 3 (P3):

"Yes, I really enjoy it. The main thing that makes it enjoyable is the gamification aspect. It does not feel like hard study. Instead, it feels like I am completing small challenges, which keeps my motivation high throughout the learning session."

A consistent theme among participants was the role of gamification in transforming vocabulary learning from a tedious task into a fun and enjoyable experience. P1 and P3 specifically attributed their positive impact to the game-like nature of Quizlet, while P2 compared it to the traditional notebook method, where repeatedly reading the same set of words can become monotonous. This reflects a more nuanced view of enjoyment that relies on the variety of Quizlet practice modes.

Actual System Use (Items 9–10)

Actual system use refers to the consistency of learners' use of technology in actual practice, as opposed to their actual attitudes or intentions (Davis, 1989). This section is important because it reveals whether positive perceptions translate into habitual behavior. Items 9 and 10 examine how regularly and frequently university students actually use Quizlet compared to other vocabulary learning media, as presented in Table 5.

Table 5. University Students' Actual System Use of Quizlet (Items 9–10)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
9	I use Quizlet regularly to learn English vocabulary	1(5%)	7(35%)	6(30%)	4(20%)	2(10%)
10	I often use Quizlet compared to other vocabulary learning media	1(5%)	7(35%)	4(20%)	5(25%)	3(15%)

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20.

Table 5 reveals striking results across the four previous sub-dimensions. For Item 9, which asks whether university students use Quizlet regularly, 40% disagreed (35% disagreed, 5% strongly disagreed), 30% were neutral, and only 30% agreed or strongly agreed. Item 10, which asks whether university students frequently use Quizlet compared to other vocabulary learning tools, showed a similar level of disagreement at 40%, with only 40% agreeing or

strongly agreeing. This is the only item in the TAM dimension where disagreement outweighed agreement.

These results indicate a significant attitude/behavior gap—a well-documented phenomenon in educational technology research where positive perceptions and intentions do not always translate into consistent actual use. University students clearly value the use of Quizlet (as demonstrated throughout the previous sub-sections), but this appreciation has not translated into regular or primary use. As final-year students, participants were likely very busy with other academic obligations in their final year, thus not having the time to open additional applications. Furthermore, the availability of other digital platforms—including YouTube, dictionary apps, and social media platforms—can reduce the frequency of Quizlet use among university students. Okkan and Aydin (2020) also found that positive perceptions of Quizlet among university students did not necessarily predict consistent use, especially when university students had access to alternative digital resources.

Interview data provide important context for the attitude-behavior gap identified in table 5. Although participants had positive attitudes toward Quizlet, interview responses confirmed that actual usage was largely driven by situations and not by habit.

Participant 1 (P1):

"If in the class, then maybe once a week, but before exams and during my independent self-study, I usually open Quizlet to gain more vocabulary."

Participant 2 (P2):

"I usually use Quizlet several times a week, depending on my study needs. Most of the time, I open it when I am preparing for exams or when I have vocabulary-related assignments. Sometimes I also use it for independent self-study when I want to review vocabulary that I learned in class."

Participant 3 (P3):

"To be honest, I do not use it as often as I should. I do not have a fixed daily routine; instead, I usually open Quizlet only in urgent situations, like right before an exam or when I have a specific assignment. I find it hard to maintain consistent independent study because I often forget to check the app unless there is a deadline."

These responses reveal a clear pattern: Quizlet use among participants was primarily reactive and event-driven, rather than part of a consistent daily study routine. P3's candid admission that they often forgot to use the app unless there was a deadline is helpful in explaining the mechanism behind the attitude-behavior gap identified in the questionnaire data. This finding is consistent with Davis (1989) and Venkatesh et al. (2003), who argued that positive perceptions of technology do not always predict habitual use, particularly when competing demands diminish the importance of the tool in daily life.

Students' Vocabulary Learning Strategies through Quizlet Based on Schmitt's VLS Framework

Schmitt's (1997) Vocabulary Learning Strategies (VLS) framework is a comprehensive theory that classifies learners' strategies for acquiring foreign language vocabulary. Schmitt divides these strategies into five main categories: deterministic, social, memory, cognitive, and metacognitive strategies. In this study, each of these five categories will be addressed through a questionnaire, which provides a detailed overview of how university students strategically engage with English vocabulary through Quizlet. Each

strategy category is discussed separately below.

Determination Strategies (Items 11–12)

Determination strategies are used by learners to independently discover the meaning of new words without relying on others (Schmitt, 1997). Determination strategies are guessing the word according to knowledge, asking the lecturer/teacher, using a dictionary, or asking someone else. In the context of Quizlet, determination strategies are applied when university students attempt to predict or infer the meaning of unfamiliar vocabulary before confirming it through the app. Items 11 and 12 examine this behavior, as presented in Table 6.

Table 6. University Students' Use of Determination Strategies through Quizlet (Items 11–12)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
11	I use Quizlet to guess or predict the meaning of new vocabulary based on the knowledge I already have	0(0%)	3(15%)	4(20%)	9(45%)	4(20%)
12	When I cannot guess the meaning of a word on Quizlet, I ask my lecturer or friends for its meaning	2(10%)	2(10%)	2(10%)	13(65%)	1(5%)

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20.

Table 6 shows a fairly positive engagement with determination strategies. For Item 11, which asked whether university students use Quizlet to guess or predict vocabulary meanings based on prior knowledge, 65% agreed (45%) or strongly agreed (20%). However, 15% disagreed and 20% remained neutral, suggesting that some university students prefer to receive word meanings directly via Quizlet or audio definitions rather than engage in guessing or predicting vocabulary meanings.

Item 12 shifts the focus to what happens when determination strategies fail—when university students are unable to independently deduce a word's meaning. Interestingly, 70% agreed (65%) or strongly agreed (5%) that they seek help from their lecturers or friends in these situations, suggesting a strong social dependence when independent strategies are insufficient. Schmitt (1997) defines determination and social strategies as closely related in practice, with university students typically attempting independent discovery first, only to turn to social resources when independent strategies are exhausted. The relatively high level of agreement for Item 12 suggests that Quizlet use for many university students is embedded in broader social learning rather than simply individual practice.

Interview data revealed different patterns in how university students approached new vocabulary on Quizlet, with some preferring direct search while others actively engaged in meaning inference.

Participant 1 (P1):

"I usually look it up immediately, because I guess if I am only guessing, then I will not know the actual meaning of it, so I look it up in Google using Google Translate."

Participant 2 (P2):

"When I come across a new word while studying with Quizlet, I usually try to guess its meaning first based on the context or the word form. After that, I check the meaning provided in the flashcard to confirm whether my guess is correct. This way helps me think more actively about the vocabulary instead of just memorizing it directly."

Participant 3 (P3):

"When I see a new word, I always try to guess the meaning first by looking at the context or the associated image if there is one. I find that trying to recall or deduce the meaning myself helps me remember the word better than just looking at the definition immediately."

These responses illustrate the variation in the use of guessing determination strategies in the questionnaire. P2 and P3 demonstrated an active guessing strategy by attempting to deduce meaning before consulting the flashcards. In contrast, P1 preferred a direct search strategy using Google Translate. These behavioral differences reflect individual learning style preferences, with P2 and P3 valuing cognitive involvement in guessing, while P1 prioritized accuracy over active processing. These differences underscore the importance of explicitly teaching guessing strategies in EFL instruction.

Social Strategies (Items 13–14)

Social strategies help students to interpret a definition of words with the help of surrounding people such as teacher/lecturer, friends, family and native speakers find their meaning (Schmitt, 1997). These strategies reflect the socially mediated nature of language learning, which emphasizes the role of social interaction in cognitive development. Items 13 and 14 examined how students use social strategies in conjunction with Quizlet, as shown in Table 7.

Table 7. University Students' Use of Social Strategies through Quizlet (Items 13–14)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
13	I seek help from my lecturer or friends to understand the meaning of vocabulary I learn from Quizlet	1(5%)	3(15%)	2(10%)	11(55%)	3(15%)
14	I discuss vocabulary from Quizlet with others to confirm whether my understanding is correct	1(5%)	3(15%)	3(15%)	11(55%)	2(10%)

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20.

Table 7 shows consistent engagement with social strategies among participants. For Item 13, 70% of university students agreed (55%) or strongly agreed (15%) that they sought help from instructors or peers to understand vocabulary encountered through Quizlet. For Item 14, 65% agreed (55%) or strongly agreed (10%) that they discussed Quizlet vocabulary with others to verify their understanding. Both items recorded 20% disagreement, which may reflect more independent or self-reliant learners who prefer to solve comprehension challenges without consulting peers.

The consistent engagement with social strategies across these two items highlights an important characteristic of how university students integrate Quizlet into their broader vocabulary learning practices rather than using it individually. Many university students utilize Quizlet as a conversation starter and resource for effective vocabulary learning. This pattern suggests that university students prefer discussing Quizlet vocabulary with peers or instructors. These findings also strengthen the argument that digital vocabulary tools are most effective not when used in isolation, but when integrated into a supportive social and instructional environment (Nation, 2001).

Interview responses regarding social strategies provided evidence of high agreement by confirming that university students actively utilize interactions between peers and lecturers as an integral part of their Quizlet-based vocabulary learning.

Participant 1 (P1):

"When there is a game, like when we play in class, that is not an exam, I usually discuss it with my friends. I ask them what a word means, or ask the lecturer about how to play the game."

Participant 2 (P2):

"I usually involve other people, such as my friends or classmates, when I find a word that is difficult to understand or when I want to make sure I am using it correctly in a sentence. Sometimes we discuss the meaning together or share examples of how the word can be used in daily conversation."

Participant 3 (P3):

"I feel the need to involve others when we use Quizlet Live in class. It is a great way to interact with classmates because we can compete or help each other in teams. I also sometimes share my study sets with friends so we can review the same material together, which makes the learning process feel more collaborative."

The interview results revealed two distinct patterns of social strategies. P1 and P2 used social interactions with peers or instructors when they encountered difficult words. In contrast, P3 used more structured collaborative learning through Quizlet Live and shared study sets that encouraged peer interdependence and collective review. P3's reference to Quizlet Live is significant, demonstrating that the platform actively facilitates the use of social strategies through its collaborative gaming features, extending its value beyond individual study.

Memory Strategies (Items 15–16)

Memory strategies also known as mnemonic strategies involve techniques that help learners link new vocabulary to existing knowledge structures to facilitate long-term retention (Schmitt, 1997). Memory strategies are widely used by university students to recall vocabulary. These strategies include using word associations, linking new words to previously known words, and engaging in repeated review. Items 15 and 16 explore how university students use Quizlet to support memory-based vocabulary learning, as presented in Table 8.

Table 8. University Students' Use of Memory Strategies through Quizlet (Items 15–16)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
15	I use Quizlet to help me remember the English vocabulary I have learned	0(0%)	3(15%)	3(15%)	11(55%)	3(15%)
16	Quizlet's flashcards help me remember vocabulary for a longer period of time	0(0%)	2(10%)	3(15%)	12(60%)	3(15%)

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20.

Table 8 presents university students' engagement with memory strategies through Quizlet, and both items yielded positive results. For Item 15, 70% of students agreed (55%) or strongly agreed (15%) that they use Quizlet as a memory aid for vocabulary they have learned, with no university students strongly disagreeing. This finding suggests that students value Quizlet not only for initial vocabulary exposure but also as a review and consolidation tool an important distinction, as multiple exposures to vocabulary are crucial for long-term retention (Nation, 2001).

Item 16 yielded the highest level of agreement in this sub-dimension: 75% of university students agreed (60%) or strongly agreed (15%) that Quizlet flashcards help them remember vocabulary for a longer period of time. No university students strongly disagreed. The Quizlet

digital flashcard system utilizes the principle of spaced repetition the practice of introducing increasing amounts of information based on the learner's performance which has been shown to be one of the most effective strategies for long-term vocabulary retention (Nation, 2001). The high level of agreement for item 16 indicates that university students experienced benefits from the mechanism of using Quizlet digital flashcards, which led to greater vocabulary retention over time compared to traditional paper-based study methods (Sanosi, 2018).

Interview data strongly supports the questionnaire findings for Items 15 and 16, where participants described active memory strategies that utilize Quizlet features for long-term vocabulary retention.

Participant 1 (P1):

"I usually use the vocabulary in my daily conversations, so that will help me remember it long-term."

Participant 2 (P2):

"To make sure I remember the vocabulary I study on Quizlet, I usually review the flashcards repeatedly and test myself using the quiz feature. The flashcard feature helps me because it allows me to see the word and it's meaning many times. Repetition helps strengthen my memory, so I can remember the vocabulary for a longer time."

Participant 3 (P3):

"To ensure I do not forget the words, I rely heavily on the flashcard feature. It is very helpful because it allows for repetitive active recall. The combination of seeing the word, hearing its pronunciation, and then testing myself helps lock the vocabulary into my long-term memory."

These responses illustrate different but complementary approaches to memory strategies. P1 used the strategy of applying newly learned vocabulary in everyday conversation to strengthen long-term vocabulary retention (Nation, 2001). P2 and P3 highlighted the role of Quizlet's flashcard system in supporting repeated review, specifically P3 mentioning the multimodal combination of visual recognition, self-testing, and auditory recitation. This process P3 described as very similar to Quizlet's spaced repetition mechanism and provides evidence that Quizlet helped them retain vocabulary for longer periods of time.

Cognitive Strategies (Items 17–18)

Cognitive strategies involve the direct mental manipulation and processing of vocabulary through active practice, repetition, and engagement with varied learning tasks (Schmitt, 1997). Cognitive strategies focus on processing repetitions and uses appropriate ways to understand vocabulary. Unlike memory strategies, which focus on association and retention, cognitive strategies emphasize repeated engagement and practice to deepen understanding and automatize vocabulary knowledge. Items 17 and 18 examined university students' use of cognitive strategies through Quizlet, as shown in Table 9.

Table 9. University Students' Use of Cognitive Strategies through Quizlet (Items 17–18)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
17	I repeat English vocabulary using Quizlet to help me understand it	0(0%)	7(35%)	0(0%)	11(55%)	2(10%)

18	I use different practice modes on Quizlet (such as quizzes or games) to understand and reinforce vocabulary	0(0%)	2(10%)	3(15%)	11(55%)	4(20%)
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Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20.

Table 9 reveals interesting patterns in the cognitive strategy sub-dimensions. For Item 17, which asked whether university students review vocabulary using Quizlet to deepen understanding, 65% agreed (55%) or strongly agreed (10%). Interestingly, 35% disagreed, and no university students were neutral. This polarization may be due to differences in learning styles among university students. Some university students favored repetition-based practice, actively using Quizlet's study and practice modes for intensive practice, while others found systematic repetition less suited to their learning preferences.

Item 18 showed more uniform engagement: 75% of university students agreed (55%) or strongly agreed (20%) that they used various practice modes such as quizzes and games to understand and reinforce vocabulary. These results suggest that even university students who do not engage in explicit repetition (as reflected in Item 17) likely engage with vocabulary through Quizlet's various interactive modes, which offer different types of cognitive engagement based on challenges, quizzes, interactive games, and problem-solving rather than repetition.

Interview results regarding cognitive strategies revealed that participants actively used various practice modes on Quizlet.

Participant 1 (P1):

"Yes, I love variety, so I tried all of the features like quizzes, games, and flashcards, and that gave me a lot of insight into how I gained new vocabulary."

Participant 2 (P2):

"When practicing vocabulary on Quizlet, I do not rely on only one study mode. I usually start with flashcards to learn the basic meaning of the words, and then I move to other modes such as quizzes or games to test my understanding. Switching between different modes helps me stay focused and makes the learning process more varied."

Participant 3 (P3):

"I usually switch between different modes to keep it fresh. While I focus a lot on flashcards, I often jump into quizzes or games to test my understanding from a different angle. I believe using multiple modes is more effective, though there are times when I just stick to flashcards if I am in a hurry."

Participants described a deliberate multimodal approach to vocabulary practice, alternating between flashcards, quizzes, and games rather than relying on a single learning mode. P2 described an approach with flashcards and then quizzes and games for testing. P3 used a single mode, flashcards, suggesting that multimodal practice is an aspirational strategy that may be limited by situational factors, consistent with the questionnaire results, which had a 75% agreement rate and is consistent with Schmit's (1997) strategy, where vocabulary engagement through a variety of tasks builds more durable mental representations.

Metacognitive Strategies (Items 19–20)

Metacognitive strategies mean students are able to control and pay attention to their learning, through their general knowledge of the language (Schmitt, 1997). These are considered higher-order strategies because they require learners to think about and regulate

their own learning, rather than simply executing a learning task. In the context of vocabulary learning through Quizlet, metacognitive strategies include planning dedicated study sessions, monitoring vocabulary progress, and evaluating the effectiveness of one's study approaches. Items 19 and 20 addressed these behaviors, as presented in Table 10.

Table 10. University Students' Use of Metacognitive Strategies through Quizlet (Items 19–20)

No.	Statement	SD(1)	D(2)	N(3)	A(4)	SA(5)
19	I plan my own English vocabulary study time using Quizlet	0(0%)	7(35%)	5(25%)	6(30%)	2(10%)
20	I evaluate whether my way of learning vocabulary through Quizlet is effective for me	0(0%)	2(10%)	3(15%)	10(50%)	5(25%)

Note. SD = Strongly Disagree; D = Disagree; N = Neutral; A = Agree; SA = Strongly Agree. N = 20.

Table 10 shows a significant contrast between the two metacognitive strategy items, highlighting the important distinction between the planning and self-evaluation dimensions of learning. For Item 19, which asks whether university students proactively plan their vocabulary study time using Quizlet, responses were most divided across the questionnaire: 35% disagreed, 25% were neutral, and only 40% agreed or strongly agreed. These results suggest that for most university students, Quizlet use is largely unplanned, except by other factors such as being triggered by assignments, specific situational vocabulary needs, or homework, rather than embedded in a deliberate and self-scheduled study routine.

However, Item 20 paints a more positive picture: 75% of university students agreed (50%) or strongly agreed (25%) that they evaluate whether their approach to vocabulary study through Quizlet is effective for them with only 10% disagreeing. These results suggest that despite the inconsistent nature of proactive planning, most students do engage in reflective self-evaluation about the effectiveness of their learning. This combination low planning but high evaluation suggests what might be called a reactive metacognitive profile: university students are able and do reflect on the effectiveness of their learning, but do not consistently use this reflective awareness to proactively plan their future learning sessions. These findings have clear pedagogical implications: instructors can support the planning dimension of metacognition by designing structured Quizlet-based learning schedules, encouraging regular self-monitoring through reflection books, recording learning progress activities within the platform, and encouraging university students to set weekly vocabulary goals.

These interviews provide the most nuanced findings in this study, reflecting the contrast between low planning (item 19) and high self-evaluation (item 20) observed in the questionnaire. Participants reported that their use of Quizlet was largely unplanned, but simultaneously demonstrated a reflective awareness of the effectiveness of their learning.

Participant 1 (P1):

"Yes, because I usually do not have any particular schedule to study, so I usually use it whenever I feel like it. After that, usually there is a score right? If I think my study goes well if the score is rising."

Participant 2 (P2):

"I do not always create a strict study schedule when using Quizlet. Most of the time, I use it whenever I feel that I need to review vocabulary, especially before exams or after learning

new words in class. To evaluate whether my learning method is effective, I usually check if I can remember the words later or recognize them when reading English texts."

Participant 3 (P3):

"I do not really plan a specific study schedule; I tend to use it whenever I feel like I need a quick review. However, I evaluate my learning by looking at my scores in the Test mode. If I can consistently get a high score, I know that my way of learning through Quizlet is actually working."

These responses illustrate that their use of Quizlet was unplanned and driven by necessity. At the same time, participants actively engaged in self-evaluation of their learning effectiveness. P1 and P3 monitored their score improvement, while P2 tested their vocabulary recall during reading. These findings suggest that while students were able to reflect, they had not yet internalized the use of Quizlet as part of a proactive, goal-oriented vocabulary learning routine.

CONCLUSION

This study examined the perceptions of 20 English Education university students toward the use of Quizlet digital flashcards for English vocabulary learning. Guided by Davis's Technology Acceptance Model (TAM) and Schmitt's Vocabulary Learning Strategies (VLS) framework, the findings were organized across ten sub-dimensions, providing a comprehensive picture of university students' perceptions of and strategic engagement with Quizlet. Based on the results of the TAM theory, it is stated that university students have a positive perception of the Quizlet system, this is seen from their consistent discussion of the ease of use experienced while using Quizlet, the features in Quizlet, and its fun use for first-time learners. This can also be seen in Items 5-6 in all questionnaires that discuss vocabulary improvement and the absence of negative responses shown by university students has shown that Quizlet is used by them as a truly effective learning media and tool. In addition, as many as 90% of university students agreed with Items 7-8 and expressed strong enjoyment and positive attitudes towards Quizlet. However, a significant attitude-behavior gap has been identified in the actual system usage sub-dimension, this gap is found in despite the good perception results, many university students do not use Quizlet as their main vocabulary learning media and many still do not use Quizlet regularly. This is revealed by interview data which revealed that Quizlet use is reactive and driven by events such as academic time, namely assignments and exams, and triggered by deadlines rather than being embedded in their daily routine or self-scheduled. According to the VLS theory, university students use several theories, such as the theory of determination, where they predict the meaning of words they encounter and then draw their own conclusions using their existing knowledge. Social strategies, particularly those of university students who frequently ask lecturers or peers about their understanding of a word, demonstrate consistent attitudes, including through Quizlet Live, which they see as a useful collaborative feature within Quizlet. The strategy that received the highest support in the VLS dimension was memory strategies, specifically the use of the Quizlet flashcard system, which is useful for remembering English vocabulary for a long period of time. The use of various practice modes is also well represented through cognitive strategies. However, the use of metacognitive strategies has shown different and clear results, namely 75% of university students reported having evaluated the effectiveness of learning

through Quizlet, while 40% of them showed a proactive attitude towards their study sessions, indicating reactive metacognitive results. This research has important implications for EFL teaching in higher education. Educators should be encouraged to integrate Quizlet into structured vocabulary learning activities, model individual and self-directed, goal-oriented study plans with explicit usage schedules, and utilize Quizlet's collaborative features to capitalize on university students' strong social strategy preferences. Future research should use a larger and more diverse sample, conduct longitudinal research, and triangulate questionnaire and interview data with objective vocabulary proficiency assessments to more comprehensively evaluate Quizlet's use on EFL vocabulary development over time.

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