


Improving junior high school students' vocabulary understanding by using quiz-based application

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Abstract: This study is aimed at improving the students' vocabulary mastery through quiz-based application. The problems that students have are lack of vocabulary skills and distraction from their gadgets. This study gives alternative options for teachers who teach the 7th-grade students in the junior high school to use quiz-based applications to increase students' interest in vocabulary skills. The method used in this study is the classroom action research (CAR) with 29 participants. The instruments were questionnaires and tests to ensure students' vocabulary skills. The effects of the quiz-based programs, especially the Quizlet, on the seventh-grade students' vocabulary knowledge are apparent from both the quantitative and qualitative standpoints. Results show the benefits can be seen in the improvement of the test results and student participation in class. However, this study has limitations that can be used for next other researchers. It is advised that educational institutions and technology developers continue to work together to guarantee that quiz-based solutions are continuously improved and customized to fit the changing demands of instructors and students

Keywords: *classroom action research, gamification, junior high school, Quiz-based application, vocabulary mastery*



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INTRODUCTION

Language production and understanding are closely related to vocabulary mastery. One's ability to comprehend and generate speech as well as texts may be hampered by a limited vocabulary. Groot (2000) asserted that vocabulary has an impact on English language proficiency in speaking, writing, listening, and reading. Regretfully, a lot of students continue to have difficulty with vocabulary. Salawazo, Simbolon, Hutabarat, Veronika, and Saragih (2020) discovered that EFL students struggle with vocabulary because most of them do not dedicate enough time to studying English, do not know as many words as they should, and limit their access to resources that provide information on new vocabulary words. Moreover, Katemba (2021) stated that most students' low intelligence quotient (IQ) prevents them from memorizing vocabulary and that their lack of motivation makes them uninterested in learning new words. According to Winingsih (2022), Quizizz can increase learning motivation and competition to be the best because, in Quizizz, there is a leaderboard that can be seen by students. Moreover, using gamification in the learning process can make the student learn through trial and error without being afraid of giving incorrect answers (Gris & Bengtson, 2021). Therefore, the teacher might employ gamification, especially with quiz-based applications, to encourage students to learn vocabulary.

The most effective technique to use gamification in testing and evaluation that helps teachers and students understand the acquisition of knowledge is through quiz-based applications (Anunpattana *et al.*, 2021). McDaniel, Agarwal, Huelser, McDermott, and Roediger III (2011) stated that quiz-based applications are low-stakes assessments that can improve learning outcomes and support students in maintaining motivation. Recent scholars have acknowledged supporting the use of gamification, particularly in the form of quiz-based applications, to teach vocabulary to students. These applications have been shown to improve student learning outcomes and experiences. Thus, Dehghanzadeh, Fardanesh, Hatami, Talaei, and Noroozi (2021) have noted that gamified learning of English has resulted in good learning experiences that are entertaining, engaging, motivating, and fun. It is in line with Sukstrienwong and Vongsumedh (2013) who revealed that the students' views of learning vocabulary through mobile gameplay are favorable, and they verified that vocabulary learning significantly improves for those who use mobile devices for vocabulary acquisition. However, the teacher should consider the game elements since gamification is supposed to be used to promote learning instead of merely being fun (Sadeghi, Sağlık, Mede, Samur, & Comert, 2022).

Hence, the teacher can elaborate the use of gamification to teach vocabulary. One of the gamification websites that can be used is Quizlet. Waluyo and Bucol (2021) stated that Quizlet can complement various teaching techniques in the form of gamified vocabulary exercises since gamification can produce a joyful environment, which will motivate students to acquire new words.

Additionally, the teacher also can utilize Quizizz to implement teaching vocabulary. Arttirmak, KB, and Samet (2018) maintained that, while Quizlet's effectiveness in teaching and acquiring vocabulary may be limited, it can still be useful in the long term. Nonetheless, Quizizz has been demonstrated by Parinduri and Mahmud (2023) to be an interesting medium that stimulates students' cognitive processes and increases the possibility that its audience would use their study time productively. According to Garg (2021), integrating Quizizz into vocabulary instruction offers an engaging platform that encourages active student participation and enhances cognitive engagement during study sessions. Scholars reveal that Quizizz can also develop students' motivation, strengthen confidence, and improve reading skills (Zhang & Crawford, 2024; Zuhriyah & Pratolo, 2020).

Many classroom problems are related to the lack of interesting learning activities, especially in using ICT tools. Many teachers feel the low vocabulary mastery of students, supported by the results of pre-tests which show that most of the students still lack vocabulary mastery. The importance of vocabulary in language learning cannot be overstated, as it is crucial for speaking, reading, listening, and writing (Nurchurifiani, Nissa, & Febriyanti, 2021). Many students face challenges in mastering vocabulary due to differences in learning styles and exposure to different languages. Educators, recognizing their pivotal role, must employ effective teaching methods that engage

students and make the learning process enjoyable, going beyond mere rote memorization of words.

To enhance student achievement, teachers should create informative and interesting materials, incorporating creative exercises, relevant contents, and interactive elements (Nurchurifiani *et al.*, 2021). This approach ensures active student involvement and facilitates better retention of vocabulary. The mastery of vocabulary is fundamental for language proficiency, serving as the foundation for effective communication in spoken and written forms (Fitri, 2018).

A strong vocabulary mastery is essential for effective communication and language proficiency, allowing individuals to express thoughts clearly in both spoken and written forms (Kurniati, Eliawarti, & Novitri, 2015). Insufficient vocabulary poses challenges in acquiring language skills, affecting both speaking and writing abilities. Student motivation is a key factor influencing their success in mastering vocabulary (Xalmurzayevna *et al.*, 2021). Motivated students actively seek solutions to vocabulary challenges, leading to greater success in language learning.

Various strategies, such as role-plays, have been seen as effective in English language instruction, enhancing students' enthusiasm, self-confidence, empathy, and critical thinking skills (Alabsi, 2016). However, students face difficulties in vocabulary mastery, stemming from factors like pronunciation, spelling, and differences between Indonesian and English (Reskiawan, Andas, & Hajra, 2020). These challenges highlight the need for tailored teaching methods and the use of technology to facilitate vocabulary acquisition.

The use of Quizlet, a technology-based learning tool, has shown positive effects on vocabulary acquisition among EFL learners (Abdulaziz B Sanosi, 2018). Quizlet contributes to making the course more enjoyable, fun, and attractive, improving students' motivation and autonomy in their learning (Camino Bueno-Alastuey & Nemeth, 2020). Additionally, Quizizz has been identified as effective in language learning, positively impacting English learning and teaching, with favourable perspectives from both teachers and students (Degirmenci, 2021).

However, challenges exist, particularly in vocabulary learning applications designed for advanced levels, potentially demotivating learners with lower proficiency (Deris & Shukor, 2019). Issues such as the dependence on a stable internet connection highlight the importance of considering accessibility in technology-based language learning.

In conclusion, vocabulary mastery is foundational for language proficiency, and educators must employ diverse teaching methods, leverage technology, and address students' individual needs to enhance learning. The vocabulary specification must be daily-use vocabulary, especially conversational vocabulary words related to the students topics in English subjects, which are concerned with their daily activities. The integration of technology tools like Quizlet and Quizizz offers promising avenues for improving vocabulary

acquisition, motivation, and overall language proficiency. The literature highlights the evolving landscape of language education, emphasizing the need for tailored approaches that consider both the challenges and opportunities presented by technology. The formulation of this study is related to whether or not the implication could give an improvement to students' scores.

Vocabulary Mastery

Norbert Schmitt (2006) emphasizes the fundamental role of vocabulary as the foundation of a language, asserting its crucial mastery as a prerequisite. Effective communication and comprehension of written contents are hindered without a solid command of vocabulary. Schmitt underscores that, even with proficient pronunciation in a foreign language, meaningful communication remains elusive without the ability to express a diverse range of meanings through words. According to Nurchurifiani, Nissa, & Febriyanti, (2021) vocabulary is key to learning a new language, as it is essential for speaking, reading, listening, and writing. Many students struggle with vocabulary mastery due to various factors like differences in learning styles and exposures to different languages. Educators, who play a vital role in the teaching of language, must find effective ways to engage students in learning vocabulary, not just by teaching words but by making the learning process enjoyable. This involves using diverse teaching methods that cater to each student's unique needs.

Gains and Redman (1986) assert that vocabulary is integral to listening, speaking, reading, and writing skills, significantly impacting speaking proficiency. Vocabulary mastery is identified as a fundamental challenge (Fitri, 2018) crucial for overall language proficiency (Richard and Renandya, 2002; Mandasari and Aminatun, 2020). Adjusting learning styles, strategies, and media use is emphasized for effective vocabulary development (Wahyudin & Rido, 2020; Lestari & Wahyudin, 2020; Sari & Wahyudin, 2019; Sasalia & Sari, 2020). Technology's role is pivotal in contemporary education, offering benefits in teaching, learning, and research (Aminatun, 2019; Pustika, 2020; Mandasari and Wahyudin, 2021). Media use in teaching, a facet of technology integration, enhances motivation, attention, and clarity in the classroom (Oktaviani and Sari, 2020; Sinaga and Oktaviani, 2020). To optimize student engagement and retention, teachers should design materials with creativity, relevance, and interactivity, as highlighted by Nurchurifiani, Nissa, & Febriyanti (2021). In modern education, integrating media tools has proven advantageous for teaching, learning, and research. The use of media in instruction enhances student motivation, attention, and understanding in the classroom. To optimize student engagement and retention, educators should create instructional materials that are creative, relevant, and interactive (Iqbalullah, 2021).

Students' Ability in Understanding and Using Words

Crucial for comprehending students' actions and feelings during vocabulary learning activities, the motivation of students serves as an essential

initial stage in recognizing the elements that influence their behaviours and emotions in vocabulary learning. Motivation is the catalyst for activating behaviour and aiding individuals in maintaining their commitment to assigned tasks (Guthrie & Wigfield, 2000). Essential to deciphering the complexities of students' actions and emotions in vocabulary learning activities is the central significance of student motivation. Positioned as a vital precondition, it establishes the groundwork for pinpointing the numerous elements influencing how students participate in and experience vocabulary learning. Motivation acts as the propelling force that not only initiates behaviour but also maintains individuals' commitment to the assigned tasks, as highlighted by Guthrie and Wigfield (2000). Grasping the subtle dynamics among motivation, behaviours, and emotions is crucial for cultivating an environment conducive to successful vocabulary acquisition. A strong understanding of vocabulary is essential for students as it directly impacts their ability to communicate effectively, both in spoken and written forms, forming a crucial foundation for language proficiency (Kurniati, Eliawarti, & Novitri 2015). Having a strong vocabulary mastery is essential for effective communication and language proficiency. It allows people to express their thoughts clearly, whether in speaking or writing. Vocabulary is like the foundation on which language fluency is constructed. When vocabulary is limited, learners encounter difficulties in acquiring language skills. While grammar is important for structuring sentences, vocabulary provides the words that make up those sentences. Without a good grasp of vocabulary, individuals, especially English learners, will struggle with both speaking and writing.

Students' Motivation in Learning Vocabulary

Recent attention has been focused on understanding the impact of self-efficacy and attitude on reading, offering valuable insights for improved reading instruction (Rayner *et al.*, 2001). While meaningful instruction is crucial for vocabulary development (Kamil & Hiebert, 2005), the importance of motivational factors in vocabulary learning has been somewhat overlooked in research. Students lacking motivation for vocabulary acquisition may not persist in learning new words, limiting incidental vocabulary learning from written texts and listening situations. This gap in motivation-related information may be attributed to the close connection between vocabulary knowledge and reading research, where motivation for vocabulary learning is often not treated separately from motivation for reading.

According to Xalmurzayevna *et al.* (2021), motivation plays a crucial role in students' willingness to learn vocabulary; when students are motivated, they actively seek solutions to vocabulary challenges, while unmotivated students may not even attempt vocabulary learning. Additionally, motivation significantly influences students' success in mastering vocabulary. Therefore, it is essential for teachers to offer resources and methods that can boost students' motivation and make them more enthusiastic about learning English

vocabulary. Then, to increase students' motivation, the teachers can utilise gamification in teaching and learning English, especially vocabulary. Wu and Huang (2017) state that gamification can boost students' motivation and interest in learning English. Quizlet and Quizizz can be used as a tool in learning English to boost students' motivation to learn English. Quizlet is fun and engaging media to learn vocabulary (Bueno-Alastuey & Nemeth, 2022; Nguyen, Duyen, Nguyen, & Dien, 2023). Additionally, using Quizlet offers percentages to identify students' vocabulary mastery so the teacher can review the students' results.

Strategies for Teaching Vocabulary

Alabsi (2016) underscores the consistent efficacy of role-play strategies in the domain of English language instruction. Positioned as a powerful tool, the role-play does not only enhance students' enthusiasm and self-confidence but it also fosters empathy and critical thinking skills. This multifaceted pedagogical approach, integrating immersive scenarios and active participation, proves instrumental in engaging students and cultivating a comprehensive understanding of the English language. Ultimately, it equips learners with valuable skills for effective communication and problem-solving.

Despite the proliferation of various vocabulary assessment methods, educational studies on vocabulary learning lack comprehensive details concerning motivation measurement tools. The existing assessments primarily explore students' strategy utilization, comprehension of instructed vocabulary, and the supportive role of vocabulary assessment in instructional practices (Pearson, Hiebert & Kamil, 2007). To enrich the field, it is essential to broaden the scope of research to include diverse motivational factors, such as individual differences and socio-cultural contexts. Such an expansion would contribute to a more holistic understanding of vocabulary acquisition. As researchers delve deeper into these areas, they may unveil nuanced relationships among motivation, vocabulary learning, and overall language proficiency. According to Marpaung (2018), current educational studies on vocabulary learning often overlook the measurement of motivation, focusing instead on strategies and comprehension. Meanwhile, to improve understanding, future research should explore diverse motivational factors such as individual differences and socio-cultural contexts. This broader approach could reveal how motivation influences vocabulary acquisition and overall language skills, providing insights into effective learning practices.

Students' Difficulties in Vocabulary Mastery

Students, as per Nurchurifiani, Nissa, & Febriyanti (2021), struggle with limited vocabulary, passive attitudes, and a lack of self-confidence in the English class. Dependencies on teachers for word meanings and reluctance to memorize have been additional challenges addressed through the implementation of the Keyword technique. Reskiawan, Andas, & Hajra (2020) high-

lighted pronunciation difficulties stemming from disparities between written and spoken English, compounded by differences in Indonesian and English spelling. These challenges, noted by Rohmatillah (2015) as well, extend to broader issues in vocabulary mastery, encompassing pronunciation, spelling, and word meaning determination. Nurchurifiani, Nissa, & Febriyanti (2021) identified factors contributing to these difficulties, including disparities between written and spoken English, infrequent interaction in English, spelling challenges, confusion between similar-sounding words, and mispronunciations due to differences between English and Indonesian phonology.

Challenges in Vocabulary Learning

According to Deris & Shukor (2019), the students express their difficulty in comprehending the vocabulary provided by the applications, finding it too challenging and unfamiliar for their daily use. Even students with high English proficiency face similar difficulties, potentially leading to demotivation and reduced confidence in using these applications for vocabulary learning. One plausible explanation is that many existing vocabulary learning mobile applications are primarily designed to prepare students for international exams like IELTS, TOEFL, and GRE, which often include more advanced vocabulary. Consequently, these words may prove difficult, particularly for those with lower or moderate English proficiency levels. Furthermore, the study also revealed that the applications lacked the appeal for various reasons, one being the requirement for a reliable internet connection.

Deris & Shukor (2019) also stated that accessing the applications depends on internet connectivity, and students encounter difficulties when their connection is slow or unavailable. This is aligned with interview data indicating that accessing the applications without a stable internet connection or in areas with poor connectivity poses a significant challenge for learners. Learners possessing elevated self-efficacy demonstrate increased determination when confronted with challenges, viewing them as objectives to conquer, rather than evade, obstacles. Those with high self-efficacy encounter fewer negative emotions throughout the tasks, as indicated by Bandura (1997). In the face of difficulties, they exhibit greater resilience, persisting in their endeavors and showing reduced susceptibility to feelings of depression or surrender (Bandura, 1994). Frequently, students with high self-efficacy interpret failure as a consequence of inadequate efforts.

Quiz-based Application

Quiz-based application means using quizzes, a form of games, into the learning activities. The purpose of making quizzes that are defined as questions in the form of games is to make students able to repeat lessons delivered by teachers in the school (Hanif *et al.*, 2023). The implementation of the quiz-based application used in the learning process can be placed at the end of the material explanation. The mini-examination is related to the material provid-

ed before. It can also be the exercise of a specific topic, in this case, English vocabulary. Creating engaging online learning material, like the Quiziz Platform, presents a new challenge for educators (Rohmani & Andriani, 2021).

Using Quizlet in Vocabulary Learning

In 2018, a study led by Abdulaziz B. Sanosi at Prince Sattam Bin Abdulaziz University in Saudi Arabia examined how Quizlet affected low-level EFL learners' vocabulary acquisition. Two student groups used Quizlet for vocabulary learning for one month, and then they took pretests and posttests. Given the experimental group's notable progress, it was determined that Quizlet had a beneficial impact on vocabulary acquisition.

M Camino Bueno-Alastuey and Katalin Nemeth evaluated previous research on vocabulary acquisition and the use of technology in language learning in a review of the literature published in 2020. Podcasts and Quizlets are emphasized as useful resources for enhancing vocabulary, drive, independence, and listening comprehension. The research highlights how important it is to provide a variety of activities and resources in language training to improve student interest, vocabulary development, and motivation. In addition to the benefits of using media tools in education, research has shown that tools like Quizlet can significantly improve vocabulary acquisition among low-level EFL learners. Students who used Quizlet for vocabulary learning showed notable progress in tests before and after the study. Similarly, podcasts and Quizlets have been highlighted as effective resources for enhancing vocabulary, independence, and listening skills. This underscores the importance of offering a variety of activities and resources in language learning to boost student interest, vocabulary growth, and motivation. In the same vein, Ningsih, Nasrullah, and Rosalina (2024) found that the Quizlet can be applied as a tool to help students' unfamiliar vocabulary and promote reading motivation and interest.

Using Quizizz for Vocabulary Teaching

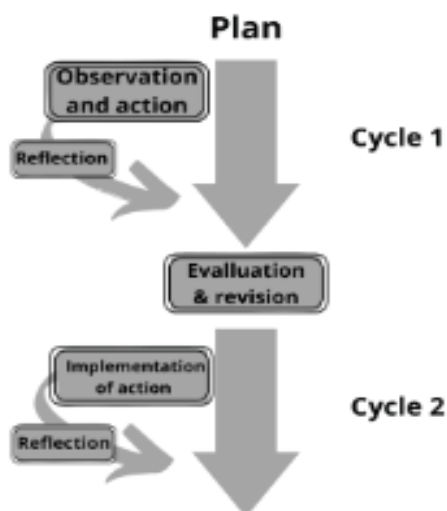
The 2021 literature study by Rukiye Degirmenci examines studies conducted between 2018 and 2021, examining usefulness and function of the Quizizz in language instruction. The study's findings support Quizizz's efficacy in improving English language instruction and learning, as reported by both teachers and students. According to Fang Zhao (2019), Quizizz is an educational application that employs game-based learning with multiplayer functionality, enhancing classroom engagement by making learning more enjoyable and motivating students through features like a leaderboard. In addition, the review addresses the viability, challenge, and incentive of utilizing Quizizz, providing useful information for teachers and researchers on language learning and teaching. In their 2022 thorough literature study, Madaline Yai Wen Niek and Azlina Abdul Aziz investigate Quizizz's potential as an online tool for teaching and learning assessment in an ESL classroom. The

purpose of the study is to determine what influences its use and how successful it is at enhancing learning outcomes. The results of the literature study and electronic database searches classify the several ways Quizizz is used in educational environments. The evaluation provides insightful information for language educators and researchers by highlighting Quizizz's efficacy as a learning tool and its influence on students' motivation, engagement, and achievement.

METHOD

The present study is a piece of research using the mixed method. It is classified as classroom action research (CAR). The study involved several steps; starting from planning, observation, action and reflection. Action research incorporates several stages of the research cycle and is carried out in a dynamic and structured manner (Kemmis and McTaggart, 1998 as cited by Burns, 2010). The participants were students in the 7th grade of one of the Junior High Schools in Yogyakarta. The classroom consisted of 29 students in a range age of 14 to 16 years. Classroom action research is an iterative, collaborative research methodology that takes place in an educational setting and requires active participation and engagement from both the researcher and the participants (Burns and Rochsantiningsih, 2006). In this investigation, the researcher works in tandem with students of one of the Junior High Schools in Yogyakarta to examine the effects of incorporating a quiz-based application into the vocabulary acquisition process.

The steps involved in conducting the study were planning, acting, observing, and reflecting (Tursini, 2023). These steps were done in cycles. Masiyem (2021) embarked on a venture aiming at enhancing vocabulary acquisition by partnering with EFL instructors to incorporate a quiz-based application. This strategic choice stemmed from the application's suitability for the EFL curriculum, its interactive functionalities, and its perceived educational advantages. The initiative was sought to harness these attributes to optimize English language learning in diverse educational settings. To improve vocabulary mastery, the researchers first planned and executed the integration of a quiz-based application in partnership with EFL teachers. The application was selected due to its adaptability to the EFL curriculum, interactive features, and pedagogical usefulness. The students were exposed to the quiz-based application throughout the action phase, and frequent quizzes were given to gauge their vocabulary growth. The instruments used in this study were questionnaires, observations, and tests that were adopted from previous experts' studies. The participants were 29 students of a junior high school in Yogyakarta. They were on the same level, Grade 7. Data on students' performance, engagement, and attitudes regarding the quiz-based learning approach were gathered during the observation phase. In-class, observations and quizzes were two ways to collect data. This study proceeded in 2 cycles as presented by the Figure 1 below.



The study started with observation, conducted activities, and proceeded with evaluation, revision, and repetition, as stated earlier, in two cycles. The first cycle began with an observation and pre-test related to students' vocabulary mastery in the topic of daily activities. The researchers adjusted the research material with the one implemented in the classroom. The pre-test was then followed by the first implementation of the use of the Quizlet application, and then the second implementation. After conducting the learning process through the quiz-based application, the researchers continued with the steps of evaluation and revision processes. Meanwhile, needed modifications were conducted on the lesson plan and activities. The last step was to administer the posttest to see whether or not there were improvements. Quantitative data were gained from the students' test scores and analyzed using quantitative data analyses. Meanwhile, qualitative data were gained from the results of the interviews and observations and were explained qualitatively. Research results were intended to provide important insights into the efficacy of technology-enhanced learning tools, notably quiz-based applications, in facilitating vocabulary development among EFL students of a junior high school in Yogyakarta through the collaborative and cyclical nature of the classroom action research. The concept of K.I.M (keyword, information, and memory cues) were involved as criteria of the vocabulary mastery levels. As the keyword, the important notion was related to a new vocabulary term or a new concept. The information might entail a definition or a more technical explanation of the concept. The memory cue helped students effectively incorporate the importance of the core idea into their understanding (Ramli & Sembilanbelas November Kolaka Rivaldin, 2021).

RESULTS AND DISCUSSION

Results

The following points indicate the results of this study, answering the formulation of the research problem of the study.

Cycle 1

The results of the class observation conducted while the teacher delivered the lesson signalled that some students were confused by the vocabulary used by the teacher. This was followed by giving questionnaires to the students (Bakti, 2018), to look at their vocabulary interests. Results of the questionnaires can be seen as follows.

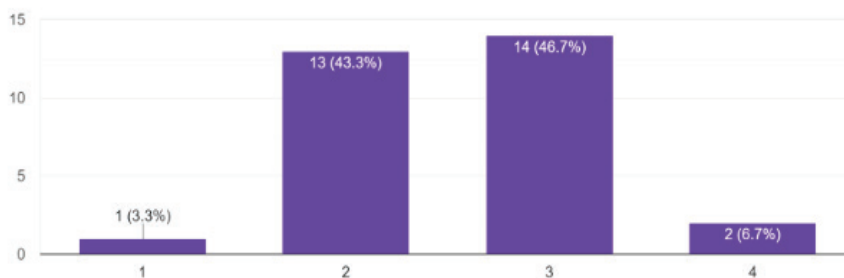


Figure 2. One of the questionnaire results regarding vocabulary.

Figure 2 above shows that most of the students found it difficult to interpret some vocabulary words in the reading text. The options 2 and 3 refer to “usually” and “often”; more than 80% of the students chose these options.

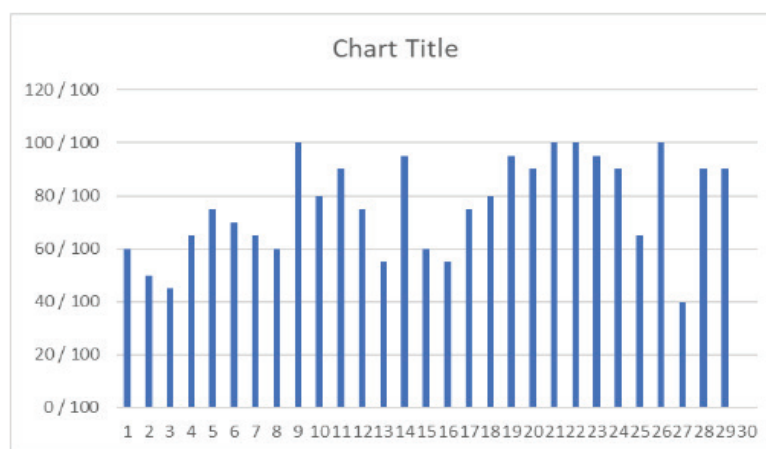


Figure 3. Chart of students' pre-test scores.

The pre-test score data in Figure 3 present the following pieces of information. The minimum score gained by the students is 40 made by only one student. The highest score is 100 gained by 4 students. The mean of the data scores is 76.2. It is slightly above the minimum score (KKM), which is the criterion for reaching the minimum score as stipulated by the curriculum. The KKM is 75. A total of 12 students got the scores lower than the KKM.

Results of the interviews held during this cycle are presented below. These are students' statements or quotations from their answers to the interview questions concerning their preferences and perspectives about vocabulary learning.

“I love learning English, Miss, but new vocabularies are challenging”

(S1, PV, 2023)

Based on the quotation above, student 1 states that vocabulary is challenging, but it seems that the student loves to learn.

“Actually, the most challenging part is writing, because we need to know grammar, vocab and more, Miss”

(S2, PV, 2023)

In the quotation above, student 2 states that writing is the most challenging task because it needs more of their mastery of grammar, vocabulary, and others. It can be said that vocabulary mastery is much needed to lead to good writing. The following quotations are related to their vocabulary learning preferences.

“If you ask me, I prefer to learn using games, Miss”

(S4, LP, 2023)

“I like to play games, in English, it is a quiz game, Miss”

(S6, LP, 2023)

Based on the two quotations above, it can be seen that their preference is to learn vocabulary by using games, especially quizzes. Some of the other students express their agreement. The researchers then started to use the Quizlets in the classes. The use of the Quizlet is found to help students in their vocabulary learning. This is in line with the findings of the study by Rofika & Sisilia (2020) which found that employing Quizlet as a tool for learning vocabulary can enhance students' ability to acquire useful vocabulary. Several problems are found that are related to internet connection. Two students have not got a gadget. The winning rule in the game also brings about a problem. Students are not able to continue playing if two winners already find the answers to the quizzes. However, at the end of the class, all students suggest that Quizizz be done for the next meeting. Alsawaier (2018) also found that students can track their progress while using game-based applications to enhance their learning which is in line with the students' perspectives.

Cycle 2

The use of the quiz activities in the classroom initially raises both agreements and disagreements on the part of the students. This is caused by some technical problems encountered in the class. However, ultimately almost all of the students agree with the implementation of the quiz-based instruction in their learning process. This is in line with the study by Pavita and Nirmala (2021) that demonstrated that the adoption of Quizizz makes students be more involved in the learning process. One of the reasons is that

the students are challenged to compete and be the first to answer the questions supplied by the teacher in the Quizizz. The results of the post test can be seen in Figure 4 below.

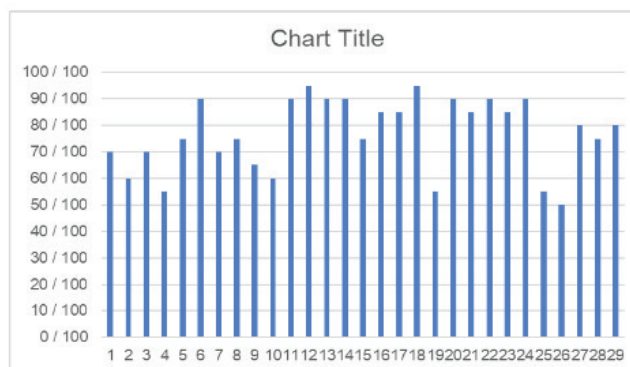


Figure 4. Chart of students' post test scores.

From Figure 4 above, it can be seen that the number of the students with scores under 75 is reduced. Also, the mean score improves from 76.2 in the pre-test to 77 in this post test. Based on these results, it can be said that one of the research questions can be answered; the use of the quiz-based mode of learning is able to improve students' vocabulary skills.

More students' quotations from the interview results can be seen as follows.

"I'm happy Miss, studying using Quizlet, so enthusiastic, tomorrow if we study together we'll use this again, Miss?"
(S5, QU, 2023)

"Very challenging, I don't want to lose to other friends, Miss"
(S6, QU, 2023)

Students' quotations from the interview results above give an indication of their enthusiasm in doing vocabulary learning using Quizlet. In this case, it can be stated that this quiz-based application is able to increase students' enthusiasm in their vocabulary learning. This is supported by the numerical evidence that can be found in their posttest scores.

Discussion

After conducting the research actions in the two cycles and completing the observations, interviews, and tests, the researchers are able to analyze the quantitative and qualitative data and present the research results. One thing, it can be stated that research results can answer the research questions mentioned earlier. The following discussion recounts the conduct of the research actions and results of the study. The first cycle was started with a pre-test after the observation was given. The aim of administering the pre-test was

to know the of students' level of vocabulary mastery at the beginning of the study. The results of the pre-test were presented in Figure 2 showing that many of the 7th-grade students in the study found that their vocabulary had not reached the best performance yet; their scores were still below the KKM proficiency criterion.

Some instructional problems were identified as well. First, some students reported that they felt confused by with the vocabulary used by the teacher in the class interactions. Second, students found technical problems, specifically with unstable or, even, unavailability of internet connection. Some students also did not have a gadget to be used in the class activities. From the results of the observations, the researchers also found that there were limited instructional activities during the learning-teaching processes in the class. Use of the Quizlet platform was aimed at improving both the instructional mode of the classroom learning processes and the students' vocabulary mastery. The Quizlet platform was expected to constantly make improvements and adjustments to make the learning of vocabulary more effective.

As it can be seen in Figure 3, actually, some of the students have made a perfect score of 100; however, there is still a gap in the results of the learning-teaching instruction of the vocabulary class: many students still received a score below the KKM criterion of the score restriction. Based on the students' opinions, they believe that vocabulary mastery is important and they prefer to use quiz-based applications in the vocabulary learning process. So, in this cycle, the Quizlet was used as a quiz-based applications for improving both the instructional effectiveness of the vocabulary instruction and students' levels of vocabulary mastery. The Quizlet technique is considered easy to use. The implementation of Quizlet tends to be beneficial for engaging students in the learning process; and some of the students even ask for more quizzes in the class activities. They also said that they gain more vocabulary items even from the exercise before the quiz. This finding is in line with Sevigny, Mack, Stilp, and Berger (2024) who acknowledged that the Quizlet has positive impacts on vocabulary ability because Quizlet can be the approach to practicing vocabulary recall.

The data do not only reflect an overall increase in the students' scores but also highlight a marked enthusiasm in their learning activities. The research questions guided this exploration effectively, shedding light on the initial state of vocabulary mastery, the influence of quiz-based tools on the 7th-grade students, and the subsequent enhancement in their vocabulary proficiency. The findings underscore the efficacy of incorporating quiz-based applications as a valuable teaching and learning resource, demonstrating a tangible boost in both academic performance and student engagement. The implementation of the quiz-based tools has proven to be a valuable asset in enhancing students' vocabulary mastery, affirming the effectiveness of this innovative approach, and paving the way for future advancements in language education (Lowe & Barnett, 1994).

According to Alderson & Kremmel (2013), the transformative impact of the quiz-based tools on students' vocabulary mastery is evident not only in improved test scores but also in heightened class participation, interactive learning, and overwhelmingly positive shifts in attitudes, showcasing the comprehensive benefits of incorporating such applications. Moreover, the impact of the quiz-based tools on students' vocabulary mastery extended beyond mere test scores. The qualitative aspects of the study were equally compelling. Observations and feedback from teachers and students indicated a notable increase in class participation and a more interactive learning environment.

Students demonstrated a heightened interest in vocabulary-related activities, engaging in discussions and collaborative learning experiences with newfound enthusiasm. The incorporation of gamified elements within the quiz-based application not only challenged students intellectually but also made the learning process more enjoyable and dynamic. In addition to quantitative assessments, student feedback surveys were conducted to gather insights into their perceptions of the quiz-based tools. The responses overwhelmingly indicated a positive shift in attitudes toward learning vocabulary. Many students expressed that the interactive nature of the quizzes made studying more enjoyable, helping them retain and recall words more effectively. Furthermore, the immediate feedback provided by the application allowed students to identify and rectify their mistakes, contributing to a more personalized and effective learning experience.

Furthermore, it is essential to consider the sustainability of these positive outcomes and potential areas for further improvement. The study's success underscores the importance of incorporating innovative and technology-driven approaches to enhance language learning. Continuous professional development for educators in effectively utilizing quiz-based tools, coupled with regular updates to the application to keep content fresh and challenging, can contribute to sustained positive outcomes in the long term. The study's findings suggest potential avenues for future research and expansion. Exploring the applicability of quiz-based tools in other language skills, such as speaking and writing, could offer a comprehensive understanding of their impact on overall language proficiency. Additionally, investigating the effectiveness of similar tools across different age groups and educational settings would contribute to a more comprehensive understanding of their potential benefits.

Moreover, collaboration between educators, developers, and researchers can facilitate the creation of more tailored and effective quiz-based applications. Customization based on individual learning styles, adaptive difficulty levels, and integration with other pedagogical strategies could further optimize the impact of these tools on students' language acquisition. In conclusion, the implementation of the quiz-based tools has proven to be a valuable asset in enhancing 7th-grade students' vocabulary mastery. The positive outcomes observed in both quantitative and qualitative measures affirm the effectiveness of this innovative approach. As education continues to evolve,

embracing technology-driven solutions, such as the quiz-based applications, can play a pivotal role in fostering engaged, motivated, and proficient learners in the ever-changing landscape of language education.

Besides, several problems had been found and solved in this study. In cycle 1, two students did not bring their cellphones. This problem makes cycle 1 a little inhibited. Nowadays, the use of mobile devices as a teaching tool should be considered. This is to provide an inclusive learning environment that optimizes technology's advantages, leading to the decision to involve every student in this practice. Due to the quiz-based application being an online application, the students have to use their cellphones. Both Quizizz and Quizlet can be used through some media such as laptops, computers, and cellphones. Yet, the cellphone is the best media to use these applications because most students bring their cellphones. Fortunately, in cycle 2 all of the students brought their cellphones so that the students can actively participate in the classroom interactions. The students seemed enthusiastic when implementing the Quizizz because they had known this application before. So, they did not need further instructions to use this game-based application. They were inspired and delighted to use the game-based applications to carry out the learning process. Alsawaier (2018) found that students can track their progress while using game-based applications to enhance their learning.

Time constraints were cycle one's second problem, which cycle two has addressed. The Quizlet was used to deliver two quizzes to students in cycle 1, but regrettably, due to time limitations, not all of them passed those sessions. Just two students used Quizlet to pass the test in cycle 1. The researchers improved time management in cycle 2 to make sure every student could pass the test. Since every student was familiar with Quizizz, cycle 2 test-takers enjoyed and passed the test. The majority of students in cycle one were reluctant to raise their hands in class. When the teacher queried students about the contents in the Quizlet throughout this cycle, many of them tended to be silent and not answer the teacher's questions. On the other hand, in cycle two, the majority of the students showed an improvement in confidence and a greater willingness to give precise answers to the questions.

The last problem from cycle 1 was concerned with discipline. Some students were not paying full attention in class; they would regularly use Quizlet against the teacher's directions and access other programs on their cellphones. The teacher tried to remind them, but they would not always comply. On the other hand, in cycle 2, almost every student followed the guidelines and showed increased focus in the classroom. Moreover, they could finish the quiz through Quizizz and the results were better.

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The majority of the students in cycle one were reluctant to raise their hands in class. When the teacher queried students about the content in the Quizlet throughout this cycle, many of them tended to be silent and not answer the teacher's questions. The last problem from cycle 1 was that some students were not paying full attention in class; they would regularly use Quizlet against the teacher's directions and access other programs on their cellphones. Similarly, Setiawan and Wiedarti (2020) found that some students found difficulty to focus on the learning process using their smartphone because they preferred to open another application instead of using the Quizlet.

In Cycle 2, class progression seemed more stable. In this cycle, the implementation of the Quizizz as the learning mode was more focused. The activities were more conformed with the lesson plan that had been pre-designed. It started by recalling the previous lesson which was about daily activities. Then the teacher served the next topic according to the list of topics contained in the syllabus, which, in this case, is "likes and dislikes". The approach used was the PPP of presentation, practice, and production.

Students seemed excited because they said that they had done with Quizizz before. Also, the material was about "likes and dislikes"; some of the students already understood it and more of them were brave enough to answer the teacher's questions. Moving to the quiz, the class tried to fix the previous technical problems by preparing earlier for the code and link to join. However, technical problems still appeared, but they were much less than during the previous meeting.

In the implementation, several pros and cons occurred. The pros were that students found learning with Quizizz was fun, competitive and it persuaded them to memorize the vocabulary items related to the topic, in order to win the quiz. The application was also provided with learning materials that were accessible for both students and teachers. Also, the connection venue was easy for students and teacher to join. On the contrary, the cons were related to technical problems, more specifically, in terms of the internet connection. Limited special features and time were also of some concerns. However, it was still considered beneficial.

The mean on the posttest improved as compared to that of the pre-test. But the improvements did not seem significant. Also, none of the students got a perfect score as they did in the pre-test. This might have happened due to several factors. One of them was the limited time, the way the teacher taught, and the activities given in class. This might be the limitation of the present study that can be refined by other researchers in future studies.

In the overall reflection, it is found that Quizizz helps students to improve their vocabulary skills, based on their scores in the posttest. This is answering the formulation of the research problem that was stated before in this study. It is in line with previous research by (Pavita and Nirmala, 2021) that states that the adoption of Quizizz demonstrates that students may be more involved in the learning process since they compete to be the first to answer the questions supplied by the teacher in the Quizizz. It can be concluded that the quiz-based applications are able to improve students' vocabulary skills. It can be seen from their scores and the instructional activities they conducted. Also, some problems in cycle 1 have been solved in Cycle 2. However, some external factors might also affect the improvement. These factors might be the limitation of this study that can be discussed further by the next researchers.

CONCLUSION

Word-memory computer applications such as the Quizlet are a great resource for seventh-grade students of the junior high school. Their test results and levels of participation both demonstrate this. These programs use technology to address issues in the classroom, such as students not paying attention, not knowing enough words, and becoming distracted by gadgets, while also making learning enjoyable. The constantly changing nature of the assessments and their immediate responses seem to be appealing to students. Maintaining this optimistic attitude is crucial to keeping students engaged in the learning processes. Further study is required to see how these tools can improve speaking and writing abilities beyond just words. To ensure that these resources meet the requirements of every student, it is suggested that educators, researchers, and IT specialists collaborate in the preparation and implementation of the instructional processes.

Another important point is also worth mentioning that the use of these technologies by teachers requires training. It helps them stay current with innovative teaching methods. For these technologies to function effectively and meet various learning objectives, it is crucial to keep them updated and improved. In term of the research limitations of the study, one can be the lack of sufficient participant data. Subsequent research ought to examine a larger and more varied sample. In summary, this study demonstrates how seventh-graders of the junior high school can learn vocabulary more effectively by utilizing digital resources. It provides useful information for educators planning to teach English and other subjects in the future.

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