

Applying Quizziz Application to Improve Students' Medical Vocabulary Achievement

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Abstract- With the huge advance of technology, teachers can utilize different online applications in teaching and Quizziz is considered as one of the applications commonly used to create online quizzes in teaching and learning activities. This study was conducted with an aim at investigating the effectiveness of using Quizziz on improving students' medical vocabulary achievement after four weeks learning medical English. Accordingly, this study was conducted as action research followed some steps including planning, acting, observing and reflecting with forty students at Thainguyn University of Medicine and Pharmacy (TUMP) participating in the study. The tests consisted of the pre-test conducted in the pre-research and the post-test conducted at the end of each cycle to assess their achievement of the assigned vocabulary lessons extracted from their syllabus by using Quizziz. The result of the research presented that after using Quizziz for medical vocabulary learning for five weeks, the participants showed an improvement in vocabulary posttests. From the observation, writer's field notes, interview and the questionnaire, it can be concluded that the students could not only improve their medical English vocabulary but also enhance their motivation and competition in learning process. Consequently, the study recommends using Quizziz application and proposes some suggestions to enhance the use of Quizziz in teaching and learning medical vocabulary.

Index Terms- Quizziz, medical vocabulary, vocabulary achievement, students, Thai Nguyen

I. INTRODUCTION

It cannot be denied that vocabulary plays a significant element to acquire the four skills of English, composing listening, speaking, reading and writing. As Schmitt and McCarty (1997) stated, vocabulary is the essential part for students because if they have sufficient vocabulary, they can understand what they are hearing or reading, write their ideas with ease in writing and communicate with others fluently in speaking. Besides, Solikhah (2015) shared the same opinion that students will find difficulties in expressing ideas if they have the limitation of vocabulary. Therefore, it is important for them to learn vocabulary to achieve the target language effectively.

In real context of teaching English at Thainguyn University of Medicine and Pharmacy, English is considered as a compulsory subject in the curriculum to meet the social needs. For medical students, medical English was used with an aim at providing knowledge supporting learning other medical subjects and future career. However, many students have displayed the idea that learning English is challenging, especially English for special purpose- medical English. They find it hard in learning and remembering medical words. Hence, it is difficult for them to learn and get good results in learning medical English at university. Moreover, the way they learn vocabulary just by writing and taking notes seems to be boring and not very effective.

Accordingly, with the huge advance of technology, many different online applications have been utilized in teaching and learning and Quizziz is regarded as one of the most commonly used applications with a gamified platform which allows teachers to create and assign online quizzes for students during the class and at home. Within the class, students can use Quizziz to collaborate online with others to complete the task of the lesson. Moreover, outside the class, they can enhance their active learning through this application with interactive quizzes. For this, this study was conducted to investigate the effectiveness of using Quizziz on how to improve students' medical vocabulary achievement. Hence, the following research questions are conducted:

- What are the improvements of the students' medical vocabulary achievement through Quizziz?
- How can Quizziz help students in learning medical vocabulary?

his article guides a stepwise walkthrough by Experts for writing a successful journal or a research paper starting from inception of ideas till their publications. Research papers are highly recognized in scholar fraternity and form a core part of PhD curriculum. Research scholars publish their research work in leading journals to complete their grades. In addition, the published research work also provides a big weight-age to get admissions in reputed varsity. Now, here we enlist the proven steps to publish the research paper in a journal.

II. LITERATURE REVIEW

2.1. Vocabulary and its process of acquisition

Vocabulary can be considered a critical part of in communicative competence and second language acquisition. As Cameron (2001)

focused, students learn a foreign language by “starting from vocabulary and discourse” because learning vocabulary as an essential part for students to successfully use that foreign language.

Meanwhile, Stuart, 2008 asserted that there are two types of vocabulary, including receptive vocabulary which learners remember and get the meaning from contexts and productive vocabulary which they can produce and express in different situations.

According to Brown and Payne (1994), they identified that there were five steps in the process of learning vocabulary in foreign language: (a) encountering new words, (b) getting the forms of the new words, (c) getting the meaning of the words, (d) remembering the forms and the meanings of the words and (e) utilizing the words.

Besides, Nation (2001) displayed that there are three different types of learning new words: (a) learning the form of a word (b) learning the meaning of a word and (c) learning both grammatical functions and collocations of the word.

Moreover, Boers (2017) and his colleagues expressed that in the process of learning vocabulary, the more frequently a word is recalled, the more likely it is to become imprinted in the learner's mind.

2.2. Vocabulary of medical English

As stated by Lankamp (1989), medical English can be defined in terms of distinguishing it from other language variants and from the general language, in which medical English vocabulary belongs to a specialized professional aspect of medicine. It can also be defined that they are the specialized senses of vocabulary elements relevant in a professional medical setting. On the other hand, he also stated that “there is a certain degree of overlap with the general vocabulary. This raises crucial questions about specialized vocabulary and its relationship to words and terms”. Because of this reason, it is challenging for students to remember the pronunciation and the usage of medical vocabulary, therefore it is crucial to implement online applications to support students to learn medical words better.

2.3. Quizizz Website and Application

Quizizz is a game-based learning tool that allows teachers to engage students in their lessons by creating quizzes that incorporate different types of questions, such as: multiple choice, open-ended, polling, fill-in-the-blank questions, and media with sounds, videos, photos... Besides, the teacher can use library in Quizizz to search ready-made quizzes and lessons, modify the questions, customize to create the own exams or competitions in a fun way and share them with the students. Students just use a device like a mobile phone, tablet or laptop... and enter a game using code to access the game with ease. Moreover, Quizizz provides a powerful grading system that the teacher can analyze the data of testing results which make the teaching and testing become more convenient and update the learning progress of the students.

According to Basuki & Hidayati (2019), Quizizz was intended as a fun multiplayer gaming application for quiz games in class that students can answer, review, and complete on-screen questions at their own pace.

In the current digital age, the advances in information technology take teaching and learning outside the walls of the classroom. Thanks to this, some e-learning web apps, such as Quizizz, are

widely used to conduct online quizzes in our daily classes and students can learn both inside and outside the classroom. Therefore, using Quizizz is one of the good ways to enhance students' learning, especially in learning vocabulary in general English or English for special purpose.

2.4. Benefits of using Quizizz in teaching and learning

With the emergence of technology, teaching and learning has become more and more popular due to its benefits. Basuki & Hidayati (2019) asserted that Quizizz is one of the classroom activities that should be recommended in the classroom since this game-based platform can create a competitive learning environment for students to answer online questions posed by their teachers with the rest of the class. Therefore, it can be said that Quizizz is considered as a teaching and assessment tool which can help students feel more motivated and engaged in class.

Mohamad, Arif, Alias, & Yunus (2020) also added that scores showed on the leader-board in Quizizz at the end of each question or test can develop a positive learning atmosphere which can help reduce the stress in class.

Besides, Zhao (2019) stated that Quizizz also allowed students to take quizzes at the same time in class, compete with each other and watch their live rankings on the leaderboard which can make them motivated to learn.

Hence, using this online application in the classroom can help not only increase students' interest but also develop students' engagement.

2.5. Benefits of using Quizizz in teaching and learning vocabulary

Using online game-based application like Quizizz is one of the good ways to make the teaching and learning interestingly. Nila Komalasari and Mukminatus Zuhriyah (2021) found out that Quizizz game could improve students' vocabulary mastery in their research. Additionally, Bal (2018) asserted that Quizizz could improve pre-intermediate students' vocabulary knowledge during four weeks. Observation and test results showed that the experimental group slightly outperformed the control group in terms of scores.

Based on the findings above, the study investigated that students were able to achieve their medical vocabulary improvements through using online Quizizz application for medical students at TUMP.

III. METHODOLOGY

3.1. Participants

This study was carried out at Thai Nguyen University of Medicine and Pharmacy where the researcher was working as a teacher. The subjects of this research included 56 students aging from 19 to 20 and studying English in Medicine in class 54C taught by the researcher. The students of Class 54C were selected to be the subjects of the research because their medical vocabulary mastery was still low, which was recognized in the reality of teaching as the teacher had the teaching practice there. Through discussion and sharing with students while learning, many of them confessed that they found difficult in remembering medical words and wanted to improve their medical vocabulary learning.

3.2. Method

In accordance with Greenwood & Levin (2006), action research is carried out by a team to improve the participants' problem. Latief (2010: 81) stated that a classroom action research design is to

enhance the quality of learning process. It means that this kind of research can be a tool that teachers can reflect and act systematically to improve students' learning achievement.

Therefore, it could be summarized that action research involved action with designing and conducting investigation in the class for bringing a positive improvement in teaching and learning. For this reason, the classroom action research was carried out in this research to improve the medical vocabulary achievement for medical students by applying Quizizz in the teaching and learning process.

3.3. Data Collection

3.3.1. Instrument of collecting data

In order to collect the data for the research questions, the test was used to find out the students' improvement on learning medical vocabulary after using Quizizz and the questionnaire was utilized to determine the students' answers after studying with Quizizz. It consisted of opened and ended questions to get both the qualitative and quantitative values. Mean (M) and Standard deviation (SD) were employed to check the differences between pre-test and post-test and to describe the students' views on Quizizz as a means for teaching and improving medical vocabulary with the following form of range according to Likert scale: 3.5-5.0: high degree; 2.5-3.4: medium degree; 1.0-2.4: low degree. As for the 2 open-ended items, the students' views were categorized into emerging themes and analyzed accordingly.

Besides, the researcher's observations and notes were also used to confirm the students' attitudes and behaviors in the class when learning medical English vocabulary through Quizizz.

3.3.2. Techniques for Collecting Data

To collect the data, pre-test and post- tests were used.

On 25 March 2022, the researchers gave Pre-test to the students to check the students' medical vocabulary understanding in Unit 1: THE BLOOD AND BODY through traditional method. The Post-tests conducted on 04 April 2022 (Cycle 1) and 20 April 2022 (Cycle 2) were distributed for students when they have finished Unit 2: THE CARDIOVASCULAR SYSTEM and Unit 3 RESPIRATORY SYSTEM. The post-tests were done by the researcher to find out the students' achievement in learning medical vocabulary by using Quizizz.

The questionnaire was given to the students at the end of cycle 2 to get their responses through the use of Quizizz in teaching and learning medical vocabulary. Besides, observations and note taking were also used to record the learning atmosphere and students' attitudes, comments and behaviors during the action research.

3.2.3. Research Procedures

The procedure of action research contained two cycles with five phases: Planning, Acting, Observing and Evaluating and Reflecting (Kemmis and Taggart, 1994: 27). It is described as followed.

a. Planning

In this stage, some activities are associated with identifying the problem through observing and asking students some questions to find out the student performance in medical English learning process, and then offer solutions to address the problem by using Quizizz; preparing lesson plan; applying Quizizz application; preparing resources, materials and preparing the test. The researcher acted as the teacher, planner, facilitator to do the teaching and researching.

b. Acting

The acting stage was the utilization of what had been planned before. The researcher playing a role as teacher used Quizizz as a media in learning medical vocabulary. The teacher guided the students to enter the PIN code and answer the quizzes. This stage had two cycles, in which each one included two meetings. The students were taught about medical vocabulary especially medical words and terminologies in the coursebook. Some activities using Quizizz based on the contents of Unit 1(The Blood and Body Defence), Unit 2 (The Cardiovascular System) and Unit 3 (Respiratory system) consisted of ice breaking; reviewing; teaching pronunciation, the form and the meaning of medical words and doing quiz. The results were displayed on the screen after that through Leader-board in the application.

c. Observing and evaluating

In this phase, the researcher as the observer took notes and recorded what happened in the class, observed and fulfilled in the observation sheet toward the utilization of Quizizz in the class. The recorded classroom activities consisted of the teacher's performance, class atmosphere, and students' responses.

d. Reflection

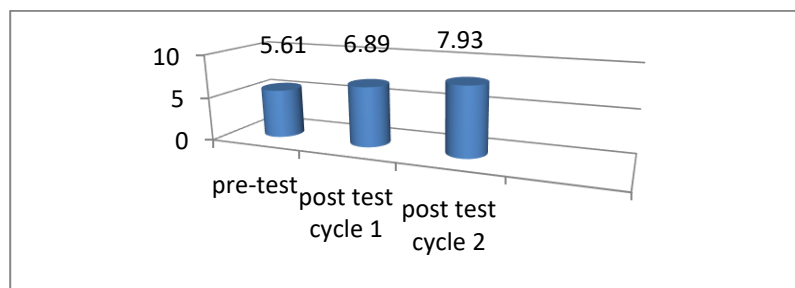
The reflection was done after the teaching and learning process using Quizizz to evaluate the results from previous stages. The researcher as the observer checked the test, the class performance and evaluated the data. From the analyzed data from each cycle, the researcher made a temporarily conclusion for classroom action research in each one. This stage was done to seek the strength and weakness in each cycle. If cycle 1 is still unsuccessful, the researcher will revise the plan.

IV. FINDINGS AND DISCUSSION

4.1. The Students' medical vocabulary achievement before and after using Quizizz

Based on the tests before and after teaching and learning activity using Quizizz to learn medical vocabulary for students, the result of scores was described in the following table.

Figure 1: The total average grades of the Pre-test and the Post-test



From the data in Figure 1, it can be concluded that there was an improvement in the average scores of the pretest, compared with the post-test in the first cycle and the post-test in the second cycle. However, the improvement in learning medical vocabulary in cycle 1 was not very high, at 6.89. Therefore, learning in cycle 1 still needs improvement to get better results in medical vocabulary achievement so cycle 2 was carried out with results reaching at

7.93. In cycle 2 the students are already familiar with Quizizz because after the first cycle they have more sessions using this application and have better preparation and revision at home using this application. The average grade in the Post Test Cycle 2 means that the use of Quizizz has achieved medical vocabulary improvements for students. This progress could also mean that the students participated, cooperated through activities using Quizizz, which had better good results in their vocabulary achievement. Therefore, it can be concluded that using online Quizizz application could help students achieve their improvements in learning medical English vocabulary.

In order to investigate clearly how using Quizizz can help improve students' medical vocabulary achievement, the data from questionnaires and observations were also found.

4.2. The Results of the Students' Responses and teacher's observations and notes toward the use of Quizizz in medical vocabulary learning

4.2.1. The students' responses from questionnaires

Table 1: Students' views of using Quizizz in medical vocabulary Learning

No.	Items	Mean	SD
1	By using Quizizz, learning pronunciation of medical words becomes more interesting with colourful and exciting media.	4.12	0.605
2	Quizizz helps me learn spelling of medical vocabulary faster.	3.84	0.764
3	Quizizz helps me memorize medical words longer and recall medical words easier.	3.56	0.885
4	Quizizz helps me remember how to connect the forms and the meanings of medical words.	3.50	1.131
5	Quizizz helps me remember grammatical functions and collocations of medical words.	3.62	0.986
6	I can use the medical words in different contexts by using Quizizz in learning medical vocabulary.	3.35	0.446
7	Quizizz helps me increase vocabulary easily in learning medical vocabulary.	3.44	0.631
8	I pay more attention in class in order to win high scores in Quizizz sessions.	3.61	0.781
9	I spend more time learning vocabulary at home to prepare better for Quizizz sessions.	3.41	0.837
10	By using Quizizz, it is easy for me to complete tasks and assignment from the teacher when learning English in the class and at home.	3.72	0.943
11	By using Quizizz, the learning atmosphere becomes more entertaining and energetic in the class.	3.87	1.038
12	Quizizz offers me the opportunity to involve in interactions and	3.19	0.813

	competitions with others at the same time in class.		
13	I feel eager and active when learning medical vocabulary using Quizizz in class.	3.81	0.605
14	I feel encouraged and competitive in learning medical vocabulary by using Quizizz.	3.88	0.980
Students' responses as a whole		3.64	0.818

Based on the findings from Table 1, it can be inferred that students' perceptions on the use of Quizizz to learn medical vocabulary was mostly at high degree with average mean value at 3.64. With regard to items 1 to 7 to discover how Quizizz helped students in the process of medical vocabulary achievement in class, the highest result of item 1 (M=4.12, SD= 0.605) revealed that most of the students highly agreed that learning pronunciation of medical words more became interesting with colourful images and sounds in the application of Quizizz. Besides, they also highly agreed that Quizizz helped them learn spelling of medical words easier, which ranked the second place with the mean value of 3.84 and the SD value of 0.764. The response from item 5 took the third rank at high degree of agreement showing that the students could remember grammatical functions and collocations of the medical word by using Quizizz in learning sessions in class. In line with this idea, they showed a high agreement in memorizing longer and recalling medical words faster together with remembering how to connect the forms as well as the meanings of the words with the same mean scores in a high rate at 3.56 and 3.50. In addition, Quizizz could help them increase vocabulary easily in learning medical vocabulary with the mean medium score of 3.44 and use the medical words in different contexts by using Quizizz in learning medical vocabulary at the medium degree of 3.35. The two items were lower in the degree of agreement than others because it is easily understood that to increase the number of medical words and apply them in different situations must require a long time to practise. However, these responses illustrated clearly that thanks to the use of Quizizz, students found it easy and interesting to learn and remember medical words; therefore, they got higher results from each cycle.

Moreover, items 8 to 12 were used to find out the learning attitude at home and in the class when learning medical vocabulary. Item 11 took the highest place with the high mean value at 3.87, which means that students expressed they found the learning atmosphere more entertaining and energetic in learning medical words with the application of Quizizz. It can be referred that they did not feel as bored and monotonous in learning vocabulary as they had felt before in traditional learning by writing and taking notes as they expressed. In plus, they highly agreed that it was easy for them to complete tasks and assignment from the teacher when learning English in the class and at home with the help of Quizizz, by the mean value at 3.72 and SD value at 0.943 and they paid more attention in class in order to win high scores in Quizizz sessions, at the mean score of 3.61 and SD value of 0.781. It means that Quizizz not only brought positive learning medical vocabulary environment in class but also encouraged them to

practice at home. Additionally, items 9 and 12 had the mean values from 3.19 to 3.41 at a medium rate of agreement and the standard deviations ranged between 0.813 and 0.837, which means that the students were relatively autonomous in learning medical vocabulary at home to prepare better for the tests used Quizizz in the class. They preferred the learning atmosphere because Quizizz offered them the great opportunity to interact and compete with others at the same time in class. Hence, it can be deduced the convenience of technology, the fun of playing games and the public of ranking shown in the leader-board of Quizizz could bring a positive learning atmosphere in class and independent learning at home for students. That also explained why the students got the highest improvement in medical vocabulary achievement in cycle 2.

For rest of the items including 13 and 14 were used to explore the students' feelings when using Quizizz in learning medical vocabulary, the mean scores were also in high degree which ranged from 3.81 to 3.88 and the standard deviations were between 0.605 and 0.980. It expresses that they felt eager and active when learning medical vocabulary using Quizizz in class and felt encouraged and competitive in learning medical vocabulary by using Quizizz. Actually, they felt encouraged when using technological devices in learning which motivated them a lot in vocabulary learning process. In short, it can be said that the students appreciated Quizizz application and accepted its usefulness in terms of achieving medical vocabulary and using Quizizz can motivate and encourage the learners in learning medical words.

For further details, the two open-ended questions were used to elicit the effectiveness of using Quizizz in learning medical vocabulary, including: (15) In what way does Quizizz help you in the medical vocabulary process the most? How?; (16) Do Quizizz help you motivate or encourage after learning speaking through PBL? If yes, how?"

From question 15, some comments emerged including: Quizizz helped students in "remembering new words better", "say medical words easier with sounds", "getting new words from colourful images", and "not feeling bored in learning vocabulary"...From question 16, many of them stated that they feel "motivated when playing quizzes", especially "encouraged and competitive with the ranking results". They also expressed that they feel encouraged because they "use mobile phones in class"; "have to work hard and prepare well for the lesson... to compete with friends" and "spend more time learning vocabulary at home"

Based on some emerged comments in questions 15 and 16, it can be understood from all the comments that there is a form of acknowledgment from the respondents that Quizizz really helped in their medical vocabulary learning, especially in remembering, recalling and increasing the number of medical words. Using Quizizz can motivate and encourage them a lot in learning process by the ranking and effects of the application. They also felt encouraged when learning medical vocabulary through Quizizz because they could use technological devices in the classroom and learned right at home with the support of technology, which brings a more positive learning atmosphere compared with the traditional way they learned before.

4.2.2. From observations and teacher's notes

From Cycle 1:

When instructing Quizizz for the first meeting, the students paid attention but there were a lot of noise. All of them were so excited about using Quizizz although some of them still misunderstood about the question of the exercise or the instructions from the teacher and entered the invalid code. Some other students found problems about using the Internet in the class. It cost a lot of time for preparing and instructing Quizizz. On the second meeting, all of the students followed the instruction better and they showed their eagerness in learning medical words with Quizizz. They finished the exercise at home on time. The result got a little improvement in answers.

From Cycle 2:

On the first meeting, the students answered the question easily in ice breaking part and answered the quiz quickly and exactly the words they had learned in wrapping up part. It means that they had a better preparation about the lesson at home. The class was in a good condition without any noise.

On the second meeting, they were required to do a quiz about medical words. The teacher found that they could use Quizizz with ease, got higher results in achieving the test and better attitude in learning in class.

From the findings, it can be concluded that the research results above agreed with Nila Komalasari and Mukminatus Zuhriyah (2021) who found that using Quizizz can help students' vocabulary mastery and Bal (2018) that teaching vocabularies through Quizizz could improve students' vocabulary learning performance. Moreover, the research results were also in line with (Zhao, 2019) who asserted that Quizizz can increase students' interest and enhance students' engagement in learning. However, there has been little research about using Quizizz in learning medical English because most of the research published has been implemented to investigate the use of this online application in learning general English. Therefore, in terms of medical vocabulary aspect, this study hopefully shed some light on problems related to using Quizizz in teaching and learning English for special purpose together with medical English vocabulary for students in particular.

V. CONCLUSION

The study investigated the improvements of using Quizizz and how it could help in medical vocabulary learning for medical students at Thainguyen University of Medicine and Pharmacy. The results of the study suggested using Quizizz technique in the academic field of teaching languages, especially in teaching English medical vocabulary. Based on the results of the research, it can be stated that Quizizz application could help students improve English medical vocabulary achievement, which was illustrated by the students' scores of vocabulary learning tests from 5.61 to 7.93 after two cycles. In addition, the findings also found that the students had good attitudes and effective practice when they used Quizizz in medical vocabulary lessons and assignments at home. They were also more competitive and encouraged in entertaining atmosphere in class.

Hence, to improve students in learning medical vocabulary by using Quizizz, some recommendations are suggested including: (1) prepare and check the facilities, especially the internet while conducting the activities using Quizizz; (2) instruct students carefully to avoid being time

consuming; (3) motivate the students to be active and give rewards after the students finish the quiz ; (4) set the specific time for each quiz in order that students can compete with others when doing the task; (5) flexibly change the task for students to motivate them in learning vocabulary. If these recommendations are considered, this will help the teaching go smoothly and reduce the shortcomings in collecting results of the students from the quiz.

It is unavoidable that there exist some limitations of the research due to the limited scope, the time constraint and other objective factors. The limitation found in the number of participants of this study is that it used only the limited subjects in one class at a single university which could be insufficient to ensure the reliability of the findings of the study. Besides, the findings of the study mainly focused on one group of the research because of the limited subjects as well. Therefore, further research should include testing subjects on a larger scale with more contents about medical English

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