Effectiveness of Interactive Based Learning at Quizizz Application:

An Action Research on Malay for Tourism Subject

ประสิทธิผลของการเรียนรู้แบบโต้ตอบด้วยโปรแกรม Quizizz :

การวิจัยเชิงปฏิบัติการภาษามลายูเพื่อการท่องเที่ยว

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ABSTRACT

The Corona Virus -19 pandemic has changed face-to-face teaching in schools to online classes using tools such as namely TS Team, Zoom, Google Meet, Facebook, or Line. This also has an impact on education at the Prince of Songkla University (PSU) Pattani campus during the semester year 2020-2021, as well as for courses the subject of the Malay Language for Tourism. For teaching to continue and to be successful, the teacher must be creative and innovative in utilizing the available online infrastructure so that the three hours of teaching become more engaging. For this reason, the infrastructure used by teacher during teaching uses the Quizizz application so that teaching is not boring and fun. This research method uses a qualitative method. The qualitative approach is used on two components, first on the Quizizz application five times and second on the questionnaire given to students. Several questions are given to get feedback about the Quizizz application and their satisfaction and opinions after using it. The results found that the Quizizz application is very effective in knowing the students' understanding after attending the Malay for Tourism subject class. Games through the Quizizz application are given as many as five titles, with two times play as a pre-test and post-test. Each topic is given 20 -30 questions. The game results found that students who listen and follow the learning for 3 hours can answer questions quickly and accurately and get a high score. In contrast, those who respond late will have a reduced score. The survey results found that students enjoy playing the Quizizz game because it can eliminate tension and boredom in learning.

Keywords: *Effectiveness, Application Quizizz, Malay Language, Tourism, Subject*

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บทคัดย่อ

การแพร่ระบาดของโรคโควิด19 ได้เปลี่ยนรูปแบบการสอนในห้องเรียนให้กลายเป็นการสอนใน ห้องเรียนออนไลน์ ด้วยโปรแกรม TS Team, Zoom, Google Meet, Facebook หรือ Line อีกทั้งยังส่งผล กระทบต่อการศึกษาของมหาวิทยาลัยสงขลานครินทร์ วิทยาเขตปัตตานีในปีการศึกษา 2563-2564 ด้วย เช่นเดียวกับในรายวิชาภาษามลายูเพื่อการท่องเที่ยว การเปลี่ยนแปลงนั้นทำให้ผู้สอนต้องมีความคิด สร้างสรรค์ และนวัตกรรมในการสอนรูปแบบออนไลน์แบบเดิม เพื่อให้เกิดความกระตือรือร้นในคาบ เรียนทั้ง 3 ชั่วโมง การสอนนั้นผู้สอนจะใช้โปรแกรม Quizizz ในชั้นเรียน งานวิจัยชิ้นนี้ใช้วิธีการศึกษา เชิงคุณภาพ วิธีการศึกษาจะมีอยู่ 2 ขั้นตอน ได้แก่ ขั้นตอนแรกจะศึกษาในโปรแกรม Quizizz จำนวน 5 ครั้ง และขั้นตอนถัดมาจะศึกษาผ่านแบบสอบถามที่ให้นักศึกษาตอบคำถาม ชุดคำถามนั้นจะให้นักศึกษา ให้ข้อเสนอแนะเกี่ยวกับโปรแกรม Quizizz รวมถึงความพึงพอใจและความคิดเห็นหลังจากใช้โปรแกรม ผลการวิจัยพบว่า โปรแกรม Quizizz มีประสิทธิภาพอย่างมาก ในการรับรู้ความเข้าใจของนักศึกษา หลัง เข้าเรียนในรายวิชาภาษามลายูเพื่อการท่องเที่ยว การเล่นเกมตอบคำถามผ่าน Quizizz มีจำนวนหัวข้อมาก ถึง 5 หัวข้อ ที่แบ่งให้เล่น 2 ครั้ง คือแบบทดสอบก่อนเรียนและหลังเรียน แต่ละหัวข้อจะมีชุดคำถาม 20 - 30 คำถาม ผลการเล่นเกมพบว่า นักศึกษาที่ตั้งใจฟังและเรียนจนหมดคาบ 3 ชั่วโมง สามารถตอบคำถาม ได้อย่างรวดเร็วและถูกต้อง และได้คะแนนสูงจากการเล่นเกม ในทางกลับกัน นักศึกษาที่ตอบช้าจะมี คะแนนที่น้อยลงกว่า ผลจากแบบสอบถามพบว่า นักศึกษาสนุกกับการเล่นเกม Quizizz เพราะสามารถ ขจัดความเครียดและความน่าเบื่อในการเรียนการสอนได้ดี

คำสำคัญ: *ประสิทธิผล โปรแกรม Quizizz ภาษามลายู การท่องเที่ยว วิชา*

Introduction

The Corona virus-19 Pandemic has changed face-to-face teaching in class. From a grand building to an online class through namely TS Team, Zoom, Google Meet, Facebook, or Line, to meet directly with students. It also impacts PSU, Pattani campus teaching in the year 2020-2021, 1st and 2nd semesters.

As is currently known, online games are one of the alternative methods of teaching and learning in the 21st century, especially when learning online. A popular application in the 2010s is Kahoot. The students can use this Kahoot application for all learning, including learning and teaching Malay. Unfortunately, all the available content contains lessons for the basic level, especially for the Malay for Tourism subject, which is not available.

The subject "413-252 Malay Language for Tourism" in semester 1 of the 2021 academic year was taken by 16 students. So that teaching this subject is not boring during lectures, lecturers look for online games that match the teaching content each week. The online game chosen is Quizizz.

This online game can be created by teachers according to the teaching content so that students can find out their understanding. This game is played 2 x at the end of the teaching. The first game is a pre-test, the second game is a result of understanding after teaching.

The Quizizz game is special because it is made by teachers according to the teaching content and game time. The teachers can see directly on the screen who is active, who is lagging behind. Apart from that, this game also determines the score obtained by students when the game is finished. If a question is difficult for students to answer, the teacher can change the level. So that game play is followed by all students use E. Slavin, Robert Cooperative Learning theory is to this research article. The purpose of this research is 1) To determine the effectiveness of online learning methods on the subject of Malay for Tourism through the Quizizz application. 2) Getting feedback on students' opinions from questionnaires given to the Quizizz application. To achieve the objectives of this research, the questions to be raised in this research are: a) How perspective students to online learning in subject Malay for Tourism? b) Is student's cooperative in game play while the use of the Quizizz application? c) Can the Quizizz application be used as a barometer of Malay for Tourism students' understanding of each topic? and d) Can the Quizizz application provide feedback to lecturers?

Research Method

This research uses a qualitative method. The qualitative approach is a research strategy that focuses on data collection. It conducted the first data from the Quizizz application during learning Malay for Tourism subject of 5 (five) titles with a game process of 2 times for one title. The second data was obtained from the answers to a questionnaire containing 15 questions. The two data were analyzed and interpreted as a result of the study using E. Slavin, Robert's theory.

Participants were 16 students and 23 who registered for the Malay for Tourism course in semester 1/2021.

The research instrument is divided into two parts:

a)　　　Record assignments playing games Quizizz while teaching online. The purpose of this task is to find out students' understanding of the material provided every week. The end of the game will be recorded in the system and used as primary data.

b)　　　The questionnaire is divided into students who fill out the questionnaire with an online form. The questionnaire was given a total of 15 questions related to Quizizz and 1 of their opinions regarding the online game that had been played.

Literature Review

The teachers have attempted various strategies and methods to improve the quality and learning outcomes amid the covid pandemic, including using tools in the form of online teaching applications. Among those who have used it are:

The First, Yanawut Chaiyo and Ranchana Nokham (2017) with title The Effect of Kahoot, Quizizz and Google forms on the Student's Perception in the Classrooms Response System, say that Kahoot, Quizizz, and Google Forms are learning technology opens for new ways of teaching in the classroom with the samples were taken from 121 students; they were attending gerontological nursing course in Faculty of Nursing, Chiang Rai College in Chiang Rai, Thailand.

Kahoot, Quizizz, and Google Forms were used throughout the lecture to facilitate questions and answers in the classroom. At the end of course, the students were asked to fill in the same questionnaire with statements related to concentration, engagement, enjoyment, perceived learning, motivation, and satisfaction. The variation in use of Kahoot, Quizizz, and Google forms had a statistically significant difference for concentration (RQ1), engagement (RQ2), enjoyment (RQ3), motivation (RQ5), and satisfaction (RQ6). Kahoot and Quizizz has presented a lot of positives over Google forms when used in the classroom. This result also suggests that students perceive that Kahoot and Quizizz supports the learning and increases the student concentration, engagement, enjoyment and motivation. However, all of the tools were not difference in how the students perceived that they learn something from doing the quiz. In addition, it helped them to be aware of their level of knowledge and facilitates the understanding of the concepts and increases their learning process. Furthermore, students feel that their answers and opinions are given value by the teacher. It easy for teachers to check how many students understands the concept. A limitation, this study is not the experimental research. Therefore, further research would be to test two different student groups: classroom response system users and non-users and investigate on learning outcome. We strongly recommend the use of Kahoot and Quizizz in the class as a tool to enhance learning experience. We conclude that Kahoot and Quizizz improve students' level of interactivity, which helps student to be active in class and have collaborative learning, which also increases student engagement in the learning process.

The second, Mishbah Ulhusna, Syelfia Dewimarni, and Lili Rismaini (2021) with the title Socialization of Quizizz as a Digital-Based Learning Media during the Pandemic Period is the result of research from community service in the form of coaching and education which is carried out for educators/ teachers in the city of Padang in the month of May - June 2021 via Google Meet.

Guidance in the form of Quizizz socialization as a digital-based learning media during world facing the COVID-19 pandemic.

Digital-based learning media is interactive media that can be applied by educators/ teachers for this distance learning, one of which is using Quizizz learning media. Quiziz is an educational game application that is narrative and flexible in nature which can be used as a means of conveying material as well as an interesting and fun learning evaluation medium. Quiziz can also be used to increase student learning motivation because it is an online learning media that contains games (interactive quizzes), and Quizizz can also be used in teaching and learning activities such as holding pre-tests, post-tests, practice questions, reinforcement of material, remedial, enrichment and so on. It is very appropriate for educators/teachers to use Quizizz as a digital-based learning medium during a pandemic.

Result is 90% of the training participants were able to utilize the media quizizz learning to create interactive quizzes. The emergence of new ideas for develop other innovative learning media that are more interesting and fun and easily understood by students. Trainees participate answer the questions on Quizizz that have been provided by the resource persons as speaker. After the community service activities were carried out, the training participants still enthusiastic about asking about Quizizz which he did not understand over the phone cellular.

The third, Arsyan (2022) with title The Implementation of Quizizz in Vocabulary Learning Activities EFL Student Perception and Motivation explain about Quizizz is an instructional media that is very helpful in learning and helps students secondary school enjoy and have more fun when taking lessons. Learning vocabulary using instructional media "Quizizz" succeeds in attracting students' attention to keep them following the lesson. Students' perception towards the use of Quizizz as a learning media in the classroom gives positive responses. When students are interested in the lesson, they get more motivated and easier for them to understand the materials.

The result research is students feel more motivated to learn vocabulary by using Quizizz as the media. It is shown from the result of the verbal data and students' utterances that they felt challenged and motivated to do the quizzes more until they got their highest score. By using quiz games that only focus on vocabulary, the researcher can see that students enjoy the learning process. When students are excited about the game, they are indirectly also excited about learning the English that the teacher is teaching.

The fourth, Amirul Mukminin Mohamad (2020) with title Quizizz as a New Norm E-Assessment on International Speaker for Malay Language Subject say that this research aims to see the

effectiveness of Quizizz app as an alternative e-assessment medium during the new norms education through comparison of quiz completion time and quiz scores between control groups and treatment groups for Malay as a Foreign Language course. This Quasi-Experimental study involved 110 international students who took the same Malay Language course.

Quizizz is a game-based quiz application that is the medium of choice for an alternative E-Assessment approach. Students can answer the quiz anywhere through their respective electronic devices. The use of Quizizz as an E-Assessment medium makes the assessment process more meaningful and fun for students. Quizizz not only offers an alternative to the boring E-Assessment medium, but also has the potential to provide educators with: automatic scoring, correct answers at the end of the quiz, percentages for questions answered correctly or incorrectly, time allocated by the student for each question, and a feature that allows questions to be modified, if the quiz needs to be run repeatedly.

The four of review literature above will be used as guidelines for analyzing this research and will see which points are in accordance with the research.

Discussion

E. Slavin, Robert theory says about cooperative learning (1995). Cooperative learning is a very effective and fun way to spur student achievement as a whole. Cooperative learning can be applied to all types of classes. According to E. Slavin, Robert, cooperative learning refers to a variety of teaching methods where students work in small groups to help each other learn the subject matter. The main purpose of cooperative learning is to provide students with the same knowledge, concepts, abilities, and understanding. At a time when all educational institutions are competing to spur the achievements of their students, and in the midst of the widespread issue of pluralism as it is today, cooperative learning is becoming increasingly important.

So Heinich, R. et. al. (2002) argues that learning media is also an important aspect of teaching methodology whose function is as a teaching aid. One of the learning media that can be used in the online learning process is application Quizizz. Quizizz is a gaming application. It's just that the Quizizz game as a learning medium that is integrated with material or evaluation questions is expected to make learning more interesting and fun. This agrees with Henry, S. (2010) who argues about the positive impact of using games, one of which is fun and entertaining games and games provide practice for problem solving and logic.

With Quizizz it makes learning interesting, has an interactive nature that prioritizes collaboration, communication, and can lead to student interaction through games. In addition, Quizizz also has the characteristics of creating motivation in learning, challenges and curiosity. Game Quizizz is a game-based educational application, which brings multi-player activities to the classroom and makes classroom exercises interactive and fun (Purba, Onno W. 2019). Implementation of using the Quizizz Game, students can do exercises in class on their electronic devices.

During the pandemic, teaching with Quizizz was one of the interesting learning media that could support the teaching and learning process. Quizizz is a digital-based learning media (multimedia). Digital media (multimedia) is media whose content is in the form of a combination of data, text, sound, and various types of images that are stored in digital formats and disseminated through networks based on optical broadband cables, satellites and microwave systems (Flew,T. 2008). Quizizz is a digital media in the form of game practice questions and online presentations that help lecturer distribute teaching materials so that they are more easily understood by students. It can even increase students' interest and enthusiasm for learning about certain materials when utilizing this digital learning media.

Quizizz games have game characteristics such as avatars, themes, memes, and entertaining music in the learning process. Quizizz also allows students to compete with each other and motivates them to study so that learning outcomes can increase. Students take quizzes at the same time in class and see their live ranking on the leaderboard. Lecturer can monitor the process and download the results when the quiz is over to evaluate student performance. Quizizz games can help motivate students to learn and improve learning outcomes. This is in line with the opinion of Dewi, C. K. (2018) who says that game-based learning has good potential to be used as an effective learning media because it can stimulate visual and verbal components.

In conclusion, interactive quizzes according to Sari, D.P., Putra, R.W.Y., & Syazali, M. (2018) are a combination of lecture, question and answer and assignment methods packaged in a quiz game. Games like these provide opportunities for players and all participants and even spectators for creative endeavors. Giving quizzes is a teacher strategy that is given to students by giving questions in the learning process related to the material that has been taught with the aim of measuring the level of understanding of students.

Cooperative learning is very suitable to be applied to online and onsite teaching where teachers can find out the role of students in each given exercise. The impact of cooperative learning is that

teachers will easily provide objective assessments of students and students will also get satisfaction with each lesson because they can directly monitor the results of the exercises or exams given.

The Quizizz application in this study includes the Game-based learning. Game-based learning is also an active learning technique where games use to enhance student learning. Here, the learning comes from playing the game and promotes critical thinking and problem-solving skills. Game-based learning can be accomplished with digital or non-digital games and may include simulations that allow students to experience the learning firsthand.

Game-based learning refers to actual games in the classroom to enhance the understanding and the teaching experience. In other words, students can use video games in the teaching and learning process to attract and motivate students' attention.

This study article uses game-based learning using the Quizizz application for the subject of Malay for Tourism. Five themes are used for games on the Quizizz application after learning, especially those related to tourism.

Title	Web Quizizz
Tourist	https://quizizz.com/admin/quiz/60c86390802848001bb783d5/tourist
Booking & Check-in	https://quizizz.com/admin/quiz/60e3f0d12998fe001b1f6572/booking-and-check-in
What is Tourism? Term for Tourism	https://quizizz.com/admin/quiz/612474eba4ea300020f4db05/istilah-pelancongan
Tourism/Hotel	https://quizizz.com/admin/quiz/6152be7c4cc65b001db10c12/pelancongan
Food or Currinary	https://quizizz.com/admin/quiz/615be4df326567001e04e0f8/malay-for-tourismguidekuninary

Table 1 Game title in Quizizz for Malay for Tourism

In table 1, five headings are used for Malay for Tourism subjects. Each title plays two times. The first game is a pre-test after following the lesson, and the second game is a post-test to determine their understanding of the level of learning. The procedure for playing is;

1) The teacher will give students a link with a password. And the students will conduct the test online.

2) The teacher informed the students to start and finish the game.

3) Each question takes a different amount of time according to the suitability of the difficulty but takes between 30-60 seconds.

4) The advantage of the app is that students can repeat the test. Teachers can view all activities.

5) There will be a score summary when the game ends.

6) Able to save the results from playing games conveniently.

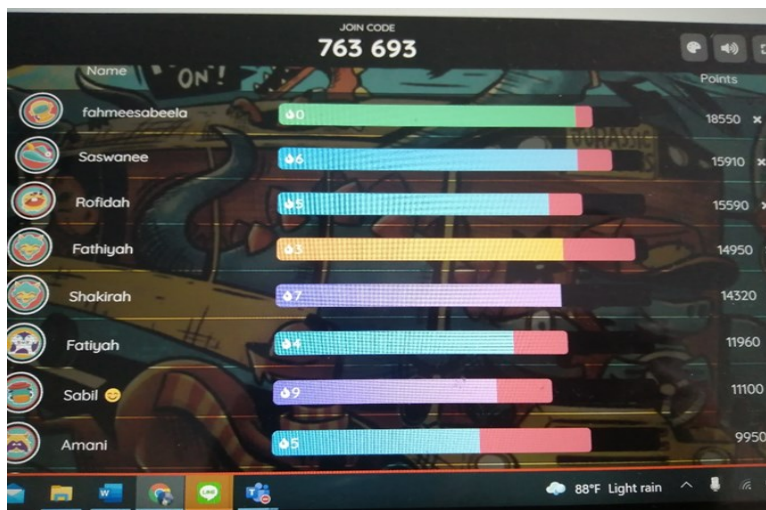The following is a picture of the game in progress.

Figure 1 Playing Quizizz

Figure 1 is a game figure in progress. Information on figures such as 763,693 is a game code for students who have downloaded Quizizz. The image on the left is the participant's amination picture followed by the name of the student used. The green, blue, yellow, and purple lines above indicate participants ranked 1st, 2nd, 3rd, and so on. The number on the right shows the number of scores that have been collected.
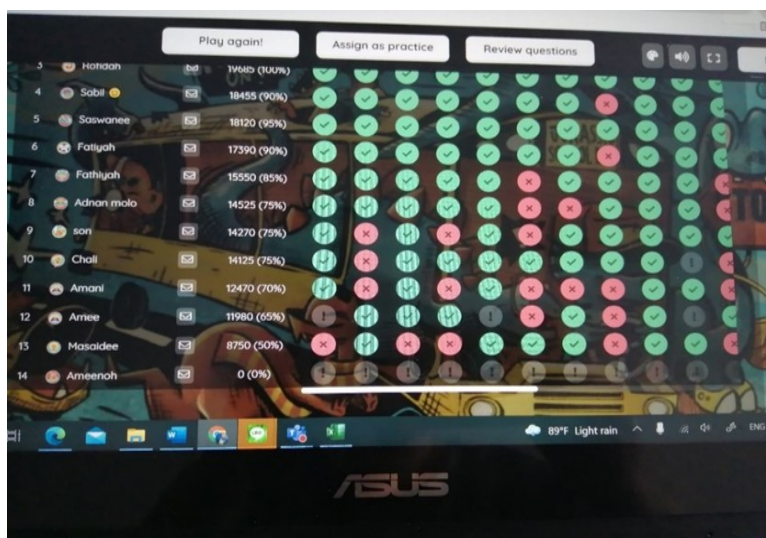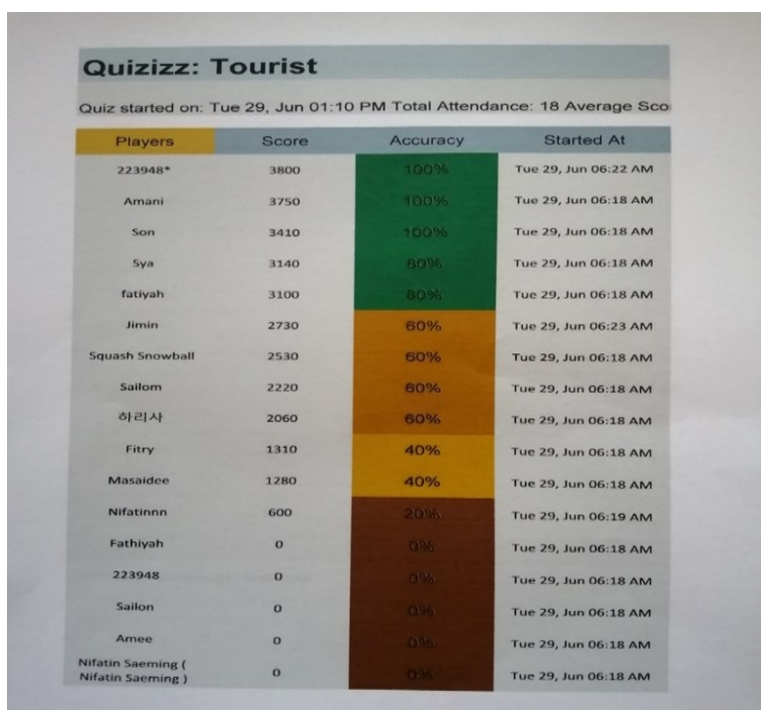
Figure 2 The game is over, and the results of the post-test

Figure 2 shows the game is over, and the teacher shows the results obtained by the students. Correct answers are colored green, while wrong answers are red. These answers are presented after completing the pre-test with the aim that they will find out the errors in the answers given. The goal is that they will change it on the post-test.

To find out the ranking of each student, the lecturer will receive a resume form that includes the Quizizz system. The following is the ranking of each student.

Figure 3 Game Presentation

Figure 3 Game presentation that follows the game based on ranking can be seen from the color displayed. The green color 100% indicates that the participant has answered all questions appropriately. The orange color 60% indicates the participant has not fully responded to the question. The yellow color 40% indicates new participants answered almost half of the questions given. The brown color 30% means new participants answered several questions. Even so, from the time used, the figure shows that the game starts at 06.18 am (American time) while Thailand time is 01.10 pm when lectures occur.

The study findings from the probing questions of how many times you have participated in Quizizz can be seen in the diagram below.

Table 2. Frequency of taking Quizizz

Table 2 shows that of the 16 respondents who participated in the Quizizz game, 7 people answered 5 times, meaning 43.8%. 7 people answered 4 times, which equals 43.8%. 1 person answered 3 times, which equals 6.3 %. And only 1 person answered 1 time, equal to 6.3%. It happens because not all students come to study for various reasons conveyed in the Facebook messenger, one of which is terrible network.

That table is in line with the answers given in table 3 regarding attendance in class.
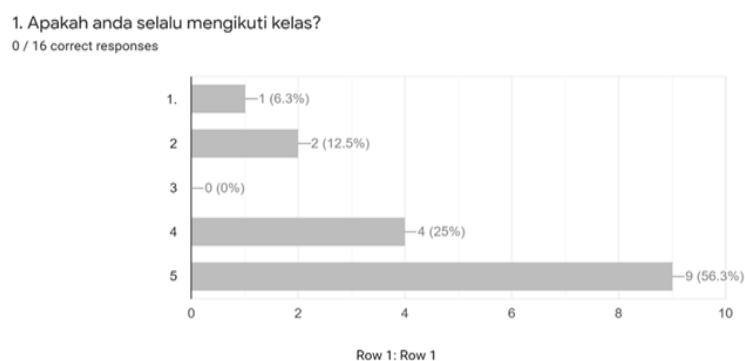
Table 3 Frequency of attending class

From table 3, the answer is that 9 out of 16 always attend class, which means as much as 56.3%. 4 people once in a while show 25%, while 2 and 1 people only take a couple of classes.

This information affects the number of times answers get ranked in the Quizizz game that follows. It can be seen in table 3.

Table 3 Quizizz Winners

Table 3 explains the answers from students regarding how many times they have won in a game they made 5 times. The green and yellow tables answer that 6 people are in the top 3, while in blue and purple, 2 people are included in the top 3. This indicates that students in the top 3 in rotation depending on their accuracy and speed in answering.

The answers above show that the highest score is above 12,000, and this is in accordance with the answers from table 4.
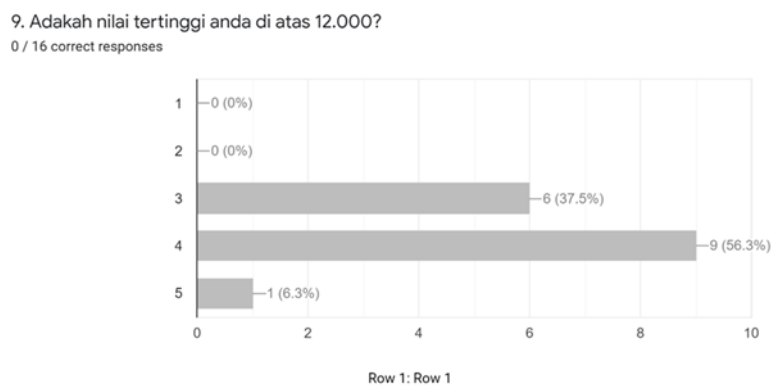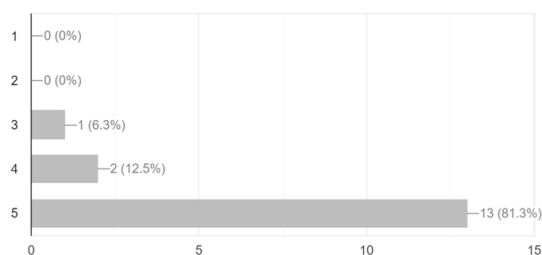

Table 4. Scores obtained by students from Quizizz

Table 4 shows the score obtained, which reached 12,000. There was 1 person, while 6 people had got it, and 9 people were almost close. The next question was about their feelings about Quizizz, and the answers were all very positive.
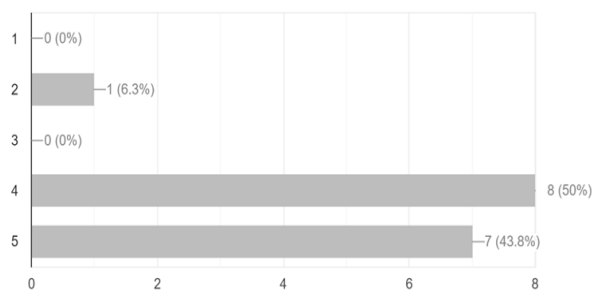
Table 5 Presentation of the fun of taking Quizizz

Table 5 shows 13 people have fun taking Quizizz, equal to 81.3%, with a score of 5, which is very satisfying. At the same time, 2 people with a score of 12.5% were very satisfied. And 1 person with 6.3 said they were satisfied. Then to get the results from the Quizizz game, whether to make them relaxed, found in table 6.

Table 6. Presentation of relaxion playing Quizizz

Table 6 shows the answers from students regarding the feelings of students participating in the Quizizz game. The students answers were as many as 7 people or 43.8%, felt very relaxed, and 8 people felt relaxed, equal to 50%, and 1 person was quite relaxed, which means 6.3%. So on, you can see the answers for questions about the differences between Quizizz games and other games in table 7.

13. Adakah game Quizizz ini berbeza dari game lainnya?
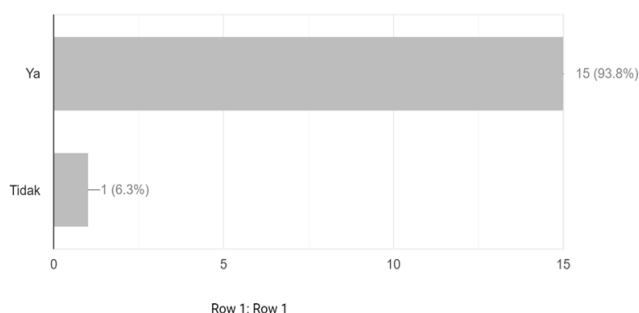0 / 16 correct responses

Table 7 Differences between Quizizz and other game

The answers from table 7 show that 1 person answered no because the student had participated in other games from other subjects. When 15 people answered yes because they had never attended a class with games, this can be seen from the answers they gave in table 8.

15. Subjek apakah yang menggunakan pembelajaran dengan game ? Pensyarah lain ?
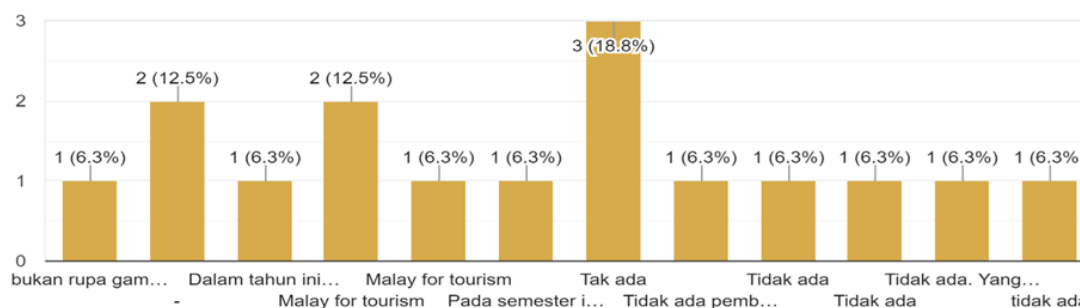16 responses

Table 8 Student statements regarding subjects using games

Table 8 shows students' answers regarding subjects using games in line with table 7; 1 person has participated in a game with a picture game. Meanwhile, 15 other people answered never and participated in games on Malay for Tourism.

When asked for students' opinions regarding the Quizizz game, there were many answers, including:

- Very good
- This app is great for taking quizzes and feeling relaxed. It's fun to know the results.
- The app is great because it makes it more focused on studying.
- Nothing because it's good but can be applied to other activities as well.

- I like it because it's fun.

- Every time I take the test, I can review the subjects I study without feeling pressured. And assess the more knowledge gained after studying

- The game is very fun because it uses the material from the lesson.

- If there is no time limit, it will be more fun.

- Want to increase the time to do the test longer.

- Want to add more time to play the game.

- This app is very fun.

- This app is suitable for online learning.

- Fun and stress free

This study concludes that students carried out cooperative learning on the subject of Malay for Tourism in semester 1 of 2021 even though the class was online for 3 hours. Teachers who have made learning engaging by using the Quizizz game application, which can adapt to the content of traveling learning. To get feedback from students regarding teaching effectiveness, the teacher gets answers from questionnaires that students have answered. The results prove that this research is appropriate using qualitative methods.

Conclusion

The research results found that the Quizizz application was very effective in finding out students' understanding after attending the Malay for Tourism subject class in the 1st semester of 2021 for 3 hours. Students are very cooperative following the game, which is conducted twice for one title. Each topic is given 20-30 questions. The first game was a pre-test, and the second was a post-test. The game results found that students who listen and follow the class for 3 hours seriously can answer questions quickly and accurately. The speed and accuracy of answering will get the highest score from the total marks given, and students who answer later will get a score lower than the first, and so on. In the end, the Quizizz application will display the 3rd, 2nd, and 1st winners during the pre-test and the post-test. The questionnaire results found that cooperative students answered 15 questions. The students' answers about the Quizizz game are said to be very enjoyable when playing the Quizizz game because it can eliminate tension and boredom in learning. The research class can be continued in face-to-face teaching after Covid -19 pandemic. The Quizizz game can also be applied to other subjects to determine its effectiveness on students.

References

Amirul Mukminin Mohamad. (2020). Quizizz sebagai E-Penilaian Norma Baharu terhadap Penutur Antarabangsa dalam Kursus Bahasa Melayu. *PENDETA Journal of Malay Language, Education and Literatur*e, *11* (Edisi Khas): 80-92.

Arsyan Allbie Armando Brahmana. (2022). The Implementation of Quizizz in Vocabulary Learning Activities: EFL Student Perception and Motivation. *E-Journal RETAIN (Research on English Language Teaching in Indonesia), 10*(01): 172-178.

Dewi, C. K. (2018). *Pengembangan Alat Evaluasi Menggunakan Aplikasi Kahoot pada Pembelajaran Matematika Kelas X*. Skripsi S1. Raden: Fakultas Tarbiyah dan Keguruan Universitas Islam Negeri Raden Intan Lampung.

E. Slavin, Robert. (1995). *Cooperative Learning: theory,research, and practice-Second Edition:* USA: Allyn & Bacon.

Flew, T. (2008). *New Media: an introduction*. New York: Oxford University Press.

Heinich, R. et. al. (2002). *Instructional Media and Technologies for Learning.* New Jersey: Simon & Schuster Company Engelwood Cliffs.

Henry, S. (2010). *Cerdas dengan Game*. Jakarta: PT Gramedia Pustaka Utama.

Mishbah Ulhusna, Syelfia Dewimarni, and Lili Rismaini. (2021). Sosialisasi Quizizz sebagai Media Pembelajaran Berbasis Digital pada Masa Pandemi. *Jurnal Pengabdian Kepada Masyaraka*t, 1 (2): 156-165.

Purba, Onno W. (2019). *Membangun E-Learning*. Jakarta: Elex Media Computindo.

Rosenberg, Marc. J. (2001). *E-Learning: Strategies for Delivering Knowledge In The Digital Age*. USA: McGraw-Hill Companies.

Sari, D.P., Putra, R.W.Y., & Syazali, M. (2018). Pengaruh Metode Kuis Interaktif terhadap Kemampuan Pemecahan Masalah Matemetis Mata Kuliah Trigonometri. *Jurnal Pendidikan Matematika*, *12*(2): 63-72.

Yanawut Chaiyo and Ranchana Nokham. (2017). The Effect of Kahoot, Quizizz and Google Forms on the student's perception in the classrooms response system. *International Conference on Digital Arts, Media and Technology (ICDAMT): 178-182.*