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The Courses are Online, What about the Students? Did They Really Online? Using Kahoot! In the Emergency Remote Teaching Process

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Abstract

This study investigates the effectiveness of using Kahoot! as an educational tool for emergency remote teaching during the COVID-19 pandemic. The research follows a phenomenological approach, which is a qualitative research method. The study group consists of 83 university students who were taking the HIST-101 course on Ataturk's Principles and History of the Turkish Revolution. The sample was selected using easily accessible sampling due to the pandemic situation. The research utilized a semi-structured interview form developed by the researchers and LMS records as data collection tools. The study lasted for 15 weeks, and the interviews were conducted online via Google Forms and the LMS. The findings were analyzed using content analysis from a holistic perspective. The research concludes that Kahoot! sessions positively impacted the students' attitudes towards the lesson and enhanced their learning. Many students found Kahoot! to be a useful tool for learning, engaging with the lesson, and having an emotionally comfortable and enjoyable educational experience without stress. The study's results suggest that using such tools for distance education has numerous benefits.

Keywords

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With the Covid-19 epidemic that has affected the whole world, like many countries, Turkey has switched to Emergency Remote Teaching Practices instead of face-to-face education. This situation has brought with it many questions and problems. It was not easy to maintain the existing curriculum on the one hand and to keep students of all ages and levels in front of the screen during long lesson hours. In this process, there are some questions discussed by families, teachers, and all institutions and organizations related to education. There is an epidemic that affects the whole world, and a compulsory distance education process has started due to the epidemic. Lessons are online, but are students ``really" in front of the screen? Do they listen to the lessons from the beginning to the end, do they actively participate in the lesson? These questions were asked by the educators as well as by the families during the epidemic process. It is known that it is difficult to teach large groups of students in the distance education process and to provide one-to-one interaction with the students in the lessons, but digital apps can be useful in preventing low motivation, apathy, and distraction (Karadağ & Yücel, 2020; Erol-Şahin, 2019). These apps are increasingly used to increase participation, improve classroom dynamics, encourage autonomy, and improve the student learning experience and learning environments. Many teachers have started using digital apps and tools to make classroom activities more interactive (Kohnke & Moorhouse, 2022). There are several applications that could be used for gamified learning. The most famous ones are Edmodo, Socrative, Kahoot!, Quizizz, Padlet; Mentimeter; Edpuzzle (Orhan-Göksün & Gürsoy, 2019). "Kahoot! it!" was used more frequently in gamification activities when compared to the other applications (Biçen & Kocakoyun, 2018; Borrell, Cosmas, Grymes, & Radunzel, 2017; Orhan-Göksün & Gürsoy, 2019; Wang & Tahir, 2020; Zhang &Yu, 2021).

Rationale and Purpose of the Study

Gamification Gamification was defined by Karl M. Kapp (2012) as the use of game-based mechanics, game thinking, and aesthetics to bring people together, encourage learning, provide motivation and solve problems. In other words, gamification is the use of game elements in non-game content to increase the experience and interest of users (Özkan & Samur, 2017, p.859). The basic elements of gamification are; goal, result, badge, score, level, challenge, challenge, competition, story, contest, rule, leaderboard, feedback, obstacles to overcome, excitement, fun, avatar, etc. (Özkan & Samur, 2017, p.859). Gamification also provides the quality sought for learners to achieve their learning goals in cognitive, affective, and social areas with various technological components (Plump & LaRosa, 2017; Yuruk, 2019; Kapp, 2012). Studies have been carried out on the use of gamification in educational institutions that follow innovations and new technologies in education. There are studies on the use of gamification, especially in computer communication technologies teaching, foreign language teaching, mathematics teaching, adult education, and the teaching of various courses in higher education institutions (Gökkaya, 2014; Güldüren, 2020; Karamert & Vardar, 2021; Karataş, 2014; Özkan & Samur, 2017; Yapıcı & Karakoyun, 2017; Yığ & Sezgin, 2021; Yıldırım & Demir, 2014; Yürük, 2019).

One of the gamification applications used in the field of education is Kahoot!. Kahoot! is an application where students in the classroom can actively participate in preparing for exams and measuring and evaluating with music and effects that give excitement to the competition. On its official site, Kahoot! is advertised as "a free software that combines the words curiosity and plays, aiming at lifelong learning regardless of subject, age or ability" (Kahoot!.it.). Kahoot! is an application that allows you to create multiple choice quizzes, matching quizzes, surveys,

true-false, short answer, ranking questions, video-audio questions, word cloud, or puzzles. Kahoot! is an application that aims to increase participation, motivation, enjoyment, and concentration to improve learning performance and interaction (Wang& Tahir, 2020).

It was thought that alternative teaching methods and digital learning tools could attract the attention of students and increase their motivation towards the lesson during the difficult epidemic process where university students try to continue their lessons at home, away from their friends and school environment. When the relevant literature was examined, applications like Kahoot! have a potential benefit when used in the learning process (Plump & LaRosa, 2017; Wichadee & Pattanapichet, 2018). In this context, it is aimed to learn the experiences of the students about Kahoot! they use during the lesson and the effect of the experience on their learning processes. Overall, this research aims to contribute to a better understanding of using the interactive game "Kahoot!" during the online learning process. It is aimed to understand how students experienced the use of Kahoot! and to explore the extent to which this interactive technology influences classroom dynamics, engagement, motivation, and learning. In our study, we addressed the following four research questions:

RQ1. In what ways does Kahoot! impact classroom dynamics during online learning?

RQ2. Does the use of Kahoot! influence students' engagement, motivation, and overall learning experiences?

Research Design

The research was designed with phenomenology which is known as an educational qualitative research design (Creswell, 2015, Yıldırım & Simsek, 2013). Phenomenology is a qualitative research approach that focuses on exploring the subjective experiences and perspectives of individuals. In the context of education, phenomenology can be used to understand the lived experiences of students, teachers, or other stakeholders in the educational process. In this study, the phenomenology method was chosen because it included a 14-week online teaching process and focused on the student experience.

Research Sample/Study Group/Participants

Convenience sampling, one of the purposeful sampling methods, was used to determine the study group, with preference given to an easily accessible sample for practicality and speed (Yıldırım & Şimşek, 2013). Additionally, given the current epidemic situation, students who were readily available and could be easily reached were selected for the study. The study group consisted of 83 first-year students who were enrolled in a mandatory history course (HIST-101) at a state university in Ankara, with 36 female and 47 male participants. To maintain anonymity, coding was used for participant names. As the study required the use of computers or smartphones with Kahoot!, only students who met these criteria and volunteered were selected from the announced classes.

Research Instruments and Processes

Phenomenological design typically relies on phenomenological interviewing as the primary method of collecting data, which is used to reveal the underlying meaning or basic structure of an experience (Creswell, 2015 Merriam, 2013). To collect qualitative data for the present study, a semi-structured interview form developed by the researcher

was used, and participants were asked to complete the form online. According to Merriam (2013), semi-structured interviews are effective in allowing participants to share their perspectives and experiences. Apart from interviews, other data collection tools such as diaries, observation notes, and study group records can be employed in phenomenological research. In the current study, the researcher kept a diary to take notes on relevant content related to the research question, and the student's attendance in online classes was also recorded through the LMS system. Additionally, to ensure data diversification, the researchers used various data collection tools, such as Zoom meetings, researcher comments, WhatsApp group messages, and LMS records. The data obtained from the interviews and documents carried out within the scope of the research were first subjected to descriptive analysis and then to content analysis. Descriptive analysis refers to the summarization and interpretation of qualitative data according to the previously determined themes that form the conceptual framework of the research. The data summarized and interpreted by descriptive analysis are further deepened by content analysis. In content analysis, interrelated data is organized under certain themes. (Baltacı, 2017; Maxwell, 2008; Yıldırım & Şimşek, 2013).

The Process for 15 weeks

The study took place in the fall semester of 2020-2021 over a 15-week course period. For this study, the participants were asked to join online Kahoot! sessions during their history classes for this purpose 15 weekly schedules have been completed in the following order.

● Due to the coronavirus epidemic period, the opportunity to meet face-to-face with the participants could not be found, and the participants had to be worked with through distance education tools throughout the application. A message was sent from LMS at the beginning of the semester. LMS: "Learning Management System" is a versatile program that provides both live lessons and tools for students to share files.

● In the first week, the subjects were introduced to using active teaching methods and the digital tools that can be used in the history lesson, and it was explained that these tools would be used during the lesson. In the second lesson, the students were asked to participate in the warm-up game after brief information about one of these tools, Kahoot!, was given. The Kahoot! played in the first week was an icebreaker activity that was prepared in the format of a warm-up game. With this Kahoot! some of the questions below can be seen, and it was aimed to help students warm up to the lesson by asking small-scale general culture questions and using humorous elements at the same time.
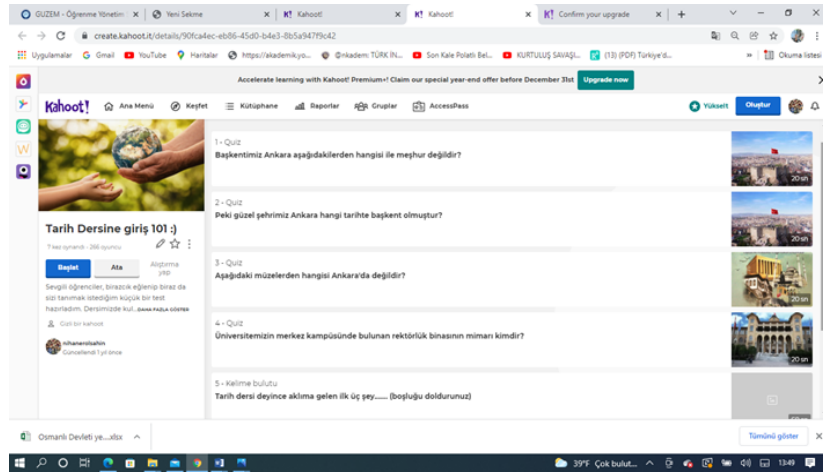
Figure 1. Warm-up Kahoot! activity for the first week

Above is the Kahoot! questions that were designed as an icebreaker activity for our first week. In this Kahoot! simple general culture questions were asked to the students about our course, our university, and Ankara. Some of which could not be seen by some of my students due to the epidemic, rather than giving information. There are also two-word cloud questions in this Kahoot! in addition to 4 test questions.
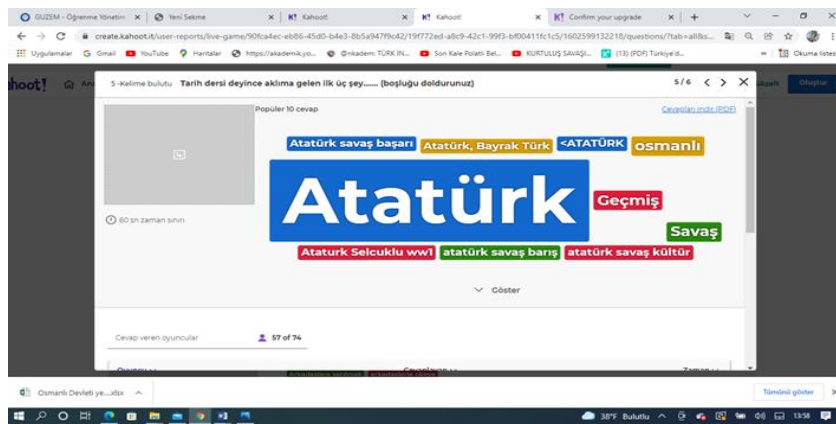
Figure 2. An example for a word cloud question- ice breaker lesson

One of the icebreaker questions asked was "What are the first three things that come to mind when you think of history lessons?" The 10 most popular answers to the question were "Atatürk, War, Peace, Ottoman, WW1, and Past. The first week of the semester was spent with acquaintance activities and the introduction of the course content, and the second week with the subject of concepts related to the course. In the second week, short information questions were asked to the students using visuals to learn their preliminary information about our lesson. This week's Kahoot! consists of 8 tests and 9 questions with a word cloud. A quiz based on the topics that will be covered during the semester was prepared in this Kahoot! By showing them familiar pictures and images of known historical events that they often come across on social media, I wanted to learn what these images mean to them, especially. With this game that was prepared as an introduction to the lesson, my students were encouraged to wonder about the content of our lesson.
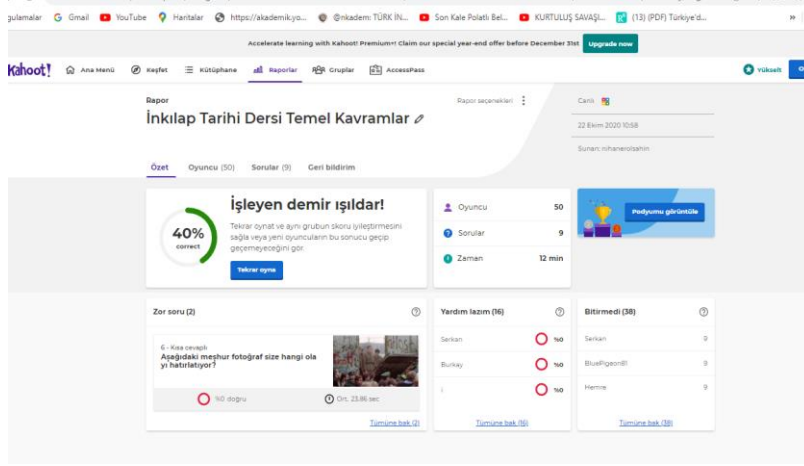
Figure 3. The Kahoot! report for the second game

When the report is examined, it is seen that the success rate of the class is 40%. The game was completed in 12 minutes in total. The question about the Berlin Wall was the most difficult. It is seen that 38 students could not complete the questions on time, and 16 students received low scores.

In the following weeks, notes and articles about the course were sent to students via LMS. Kahoot! about the topic of that week was played sometimes at the beginning of the lesson and sometimes at the end of the lesson. Kahoot! scores were tracked for 15 weeks from the beginning of the semester, and the scores of the students who entered the ranking were recorded. Features such as reports of the students, rankings, and scoreboards are provided by Kahoot! Premium account. A picture of the 4th week's scoreboard is shown below.

Figure 4. 4th week's scoreboard

Kahoot! was regularly applied in all classes throughout our 14-week course period, either as an introductory activity or an end-of-course evaluation activity. In our 15th week, a crowded Zoom event was organized with our students at the end of the semester. During the period when this application was being done, all lessons were taken remotely by our students due to the epidemic. Therefore, the freshmen students who had no opportunity to meet each other yet, had not physically experienced the university environment, and had been confined to their rooms for their

entire lives were our students. With the interactive activity that was done in the lesson, they had the chance to see and communicate with their other friends, even if it was virtual. This situation was understood both from the feedback received from them at the end of the semester and from the smiles on their faces and the jokes they made during the Zoom. In addition, the WhatsApp group established was used almost every day throughout the entire application process, creating a dynamic structure for both my announcements and the information exchange of my students. The correspondence here is thought to be a factor that strengthens intra-group communication.

In last week's live Kahoot! The event, an open-ended question was asked, which was "What are your expectations and suggestions for our next classes," shown above.
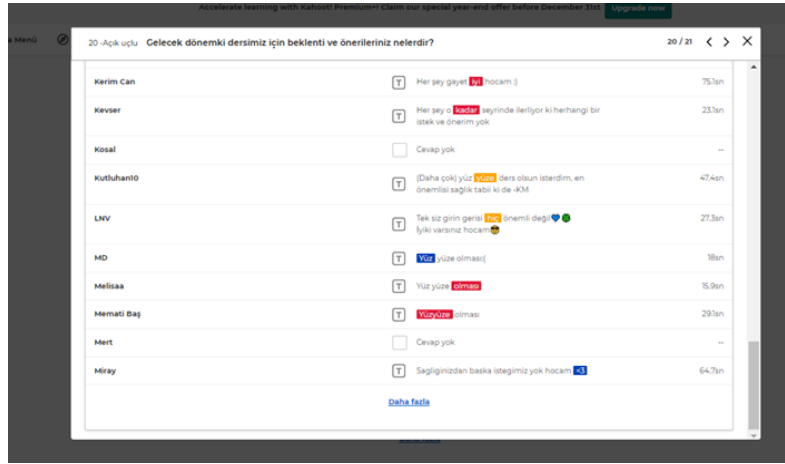
Figure 5. Suggestions from students

When the answers of the students were checked, it was observed that starting face-to-face lessons as soon as possible was mostly wanted by them. As mentioned, many things were deprived of university students due to the epidemic process that affected the whole world. Along with the request for face-to-face lessons, it was seen that many students wanted Kahoot! to be continued to be used in the next semester. In addition, requests and expectations such as using different applications in the lessons, processing recent history topics in more detail, including documentaries and videos, conducting group studies, visiting museums, and extending the lesson hours were expressed by the students. Throughout the term, many students expressed their satisfaction with the activities carried out and wanted the lessons to continue in the same way. Similar statements were made in the meeting held on Zoom after the game.

A few days after this event, the LMS lecture was logged in to announce the results of the gamified lesson plan. After collecting the scores for all weeks, small gifts were sent to the addresses of the students who ranked in the top three. Thus, the term was completed. Below is the message sent by one of the students who received the gift with their permission.

Figure 6. One of the photos of the gift for the winners'

Data Analysis

Content analysis was utilized to analyze the data gathered during the research, and to identify relevant concepts and relationships that could explain the collected data. By applying content analysis, the data were systematically examined to identify any potentially hidden facts. The content analysis process involved gathering similar data under specific concepts and themes and interpreting and presenting the findings in a manner that could be easily understood by the reader (Yıldırım & Şimşek 2013). The goal was to gain a deeper understanding of the data and to derive meaningful insights from the analysis.

Validity and Reliability

The following steps were taken for the validity and reliability of the study.

-The pilot study of the semi-structured interview form for the use of Kahoot! developed by the researchers was carried out with ten students and one question was revised. After the pilot study expert opinions were taken and one question was removed. The data sources were diversified by using interviews, documents, and LMS records in the collection of the research data in the formation of the research question and during the analysis of the data.

-Documents and the researcher's diary are stored electronically so that they can be accessed when necessary. The findings are presented with direct quotations without including the personal opinion of the researcher

-Throughout the research, the students were informed that their personal information would be stored, and participation in the study was voluntary. To maintain anonymity, students' names were replaced with codes (e.g., S1, S2, S3, etc.). During data analysis, frequency counts varied due to some participants providing multiple responses that fell under more than one category (n=83).

Results

The objective of the questions was to gain insight into the students' utilization of Kahoot! and how it affected the classroom environment, participation, drive, and educational achievements. The initial inquiry sought to determine whether Kahoot! had a positive or negative influence on the students' engagement levels in History 101 and the factors that contributed to it. The subsequent question aimed to establish whether Kahoot! had a positive or negative

impact on the students' learning in History 101 and the reasons behind it. The findings obtained regarding the question asked to the participants about their experiences of playing Kahoot! in online classes are gathered and presented in Table 1.

Table 1

Participants' Views of Experience in the Use of Kahoot! in Online Classes

Theme	Category	Code	f
Fun, enjoyment, and challenge	Kahoot! features (funny,exciting, enjoyable)	· The exciting music · The feedback after answers (like "you did it well, back luck, you can do it better" were enjoyable · The exited countdown · A new and enjoyable application · Challenge	36
	The quizzes	· Enjoyable/ funny/ interesting questions · Unforgettable questions · 15 different types of quizzes for 15 weeks · Different question types (quiz, poll, world cloud, puzzle, etc.)	32
	An interactive tool	· To be in a live Kahoot! session in Zoom was fun · To see the other friends' faces was fun · chat/talk about the quiz was enjoyable	29
Interaction, engagement, attention, and focus	Kahoot! features	· The app is competitive and motivating · The music and the other attractive features	28
	Gamificated lesson plans with Kahoot!	· Announcements before classes · Different question types · Interesting questions on the topic · The need for attendance due to the scoring system	27
In-depth learning	Learning history with Kahoot!	· Research from different sources · Wanted to learn deeply	30

		· Discussion/talking with friends about the questions	
Socializing application	Socializing Connection	· Online Kahoot! sessions · Quizzes with rewards · Challenging quizzes · To see friends in live sessions · WhatsApp group and LMS forum · Like to be a part of a group	28
Motivation	Motivated to attend classes	· Not boring · Need to attend all classes · Need to pay attention · Wanted to wait till the end of the class.	28

When Table 1 is examined, it is seen that the views of the participants about the application are gathered under the themes of fun and enjoyment, interaction, engagement, attention and focus, in-depth learning, socializing application, and motivation. Some of the opinions of the participants in the "fun and enjoyment" category are presented below.

● Fun and enjoyment (n56)

S9. Kahoot! increased my learning in a fun way. This tool helps us visualize and entertain and understand the subject.

S1. The lesson was very entertaining as it was, even my brother wanted to join the lesson with me and answer Kahoot! questions.

S11. Teaching the lesson in a fun and active way affects both the adaptation process and understanding positively.

S32. ……because it makes the lessons more fun and this makes me more interested in the lesson.

● Attention, Focus (n22)

S40. Kahoot! helped me to focus on the lesson. Because having a small exam related to those subjects at the end or beginning of the course allowed me to focus more on the course, even though it did not have a negative effect on my exam results.

S61. I think Kahoot! is an interesting tool with its music and feedback. Also, the fact that you ask very interesting questions aroused my curiosity every week.

S9. It keeps your mind fit during the lesson, we need to give our attention, so it makes you more interested and focused on the lesson and the subject.

● Kahoot! features (n8)

S1. ... The interface was user-friendly and adaptable, making it easy to use without much difficulty. The use of the program offers a comfortable working process ...

S18: ... It was really nice and interesting questions, and also I liked the music and feedback, it was easy to use.

Although most of the participants found the tool easy and fun, some participants stated that they had some difficulties while using the program. Some of the students stated that they had connection problems. some of them had to give up the game. some of them couldn't join some sessions.

The second theme is in-depth learning, the quotes from the category are shown below;

● Learning history with Kahoot! (n 30)

S12. I felt good in this lesson, because frankly, what we do during the pandemic period is just look at the screen, read or listen to a lecture note, and solve a test in this way. Plus, it has the consistency of social activity. It is even more enjoyable to play this game with everyone's camera open at the video Zoom meeting. Because I see everyone's gestures and facial movements and it's like a real date.

S66. The knowledge I gained was permanent and I saw similar question types by working with Kahoot! before the exams and I think I was successful in the exam. It made me research to find out the answers to the questions I didn't know.

S70. Using Kahoot! in our lessons increased my motivation towards the lesson. Because I entered the class knowing that I would do a fun activity and interact with my friends that I did not see face to face. Testing my knowledge in this way and not getting any points for it reduced my stress.

S11. ….increased it. Because in Kahoot! questions, when I was asked about topics that I did not know before, I made a mistake. However, I researched the issue I was doing wrong. In short, I can say that Kahoot! triggers the motivation to do research.

S72: This application increased my interest in the lesson because it allowed me to learn the information mentioned in the lesson but that I could not remember or remember incorrectly and that it was permanent.

When the views of the students are examined, it is seen that the online classes with Kahoot! affected them in many different ways; "wanted to learn deeply", "Discussion/talking with friends about the questions", "researching the subject from different sources", and "increasing interest in history lessons".

As a result of the epidemic that affected the whole world in the year the application was made (2020-2021), courses in Turkey started to be given by distance education on a compulsory basis. Our participants, university students, often say that this process turns into a boring one for students.

Students find applications such as Kahoot! useful, motivating, and interesting as they make the monotonous distance learning process more enjoyable and interesting. There are some quotes from students about these categories of "Socializing and motivation":

S2. These lessons with Kahoot! increased my learning. It gets boring after a while that we don't do any activities related to the lesson in our other lessons, but only teach the information given, and even if you are interested in that lesson, you may not want to attend the lesson because it is monotonous. Events like Kahoot!, zoom meetings make it more fun and effective. In this way, our motivation increases against the course.

S19. ….Yes, it keeps my interest in the lesson as it is new, different, and fun instead of the classic lecture.

S22. …..Unlike other classes, when entering the history lessons, "Yes, let's see what I have to memorize in these 40 minutes." Instead of thinking, "Let's see what kind of questions I will test myself at the end of the lesson" I think. Of course, keeping the lesson times at a level that will not be boring thanks to the understanding of our teacher is also effective :)) I am glad that I got to know you. One of the rare things I regret at the end of the term is that your classes are over and I couldn't meet you face to face and chat about recent history.

S59. Using Kahoot! in our lessons increased my motivation towards the lesson. Because I entered the class knowing that I would do a fun activity and interact with my friends that I did not see face to face. Testing my knowledge in this way and not getting any points for it reduced my stress.

S80. Yes, having different and entertaining questions increased my interest and motivation in the course.

S82. …… increased. I was also motivated to listen to the lesson, especially knowing that what I learned in the lesson will come up after me and that the subjects come across in a fun way rather than ordinary history subjects that we know in the past.

Our data showed that Kahoot! can increase student engagement and motivation and Kahoot! can help students retain information by allowing them to review material in a fun and interactive way. In addition, when the LMS records were examined, it was seen that 83 participants followed the course from the beginning to the end for 15 weeks, and did not make any absences except for illness or travel. Based on all these results we can say that by gamifying the learning experience, students are more likely to participate in class and enjoy the learning process.

Conclusion and Suggestions

The primary objective of this study is to uncover the experiences of students regarding the use of Kahoot! in online learning. In this regard, the 15-week implementation process and the feedback obtained from the students at the end have led to various conclusions.

Participants stated that the tool had many advantages. Most of the students stated that their learning experience was described as "fun and enjoyable" (Licorish, Owen, Daniel, & George, 2018) also found that their students found Kahoot! fun and they state that fun is a useful classroom engagement dynamic. Also, many students stated that Kahoot! helps with interaction, engagement, attention, and focus in online lessons.

According to analysis, it was concluded that the use of Kahoot! in an emergency remote learning process connects the students to the class. Some researchers agree that Kahoot! had positive effects like willingness to

prepare for class and learning (İsmail et al., 2019; Plump & LaRosa 2017; Wang 2015; Wang and Lieberoth, 2016). Also, our data from LMS recordings shows more than 90% of students participated in the formative assessment activities with Kahoot!. There was a common problem of emergency remote learning during the Coronavirus pandemic. Students' motivation and discipline had become an important problem during the pandemic in Turkey (Erol-Şahin & Kara-Erol, 2022). It has seen that Kahoot! helped students to attend their classes regularly, and students stated that this tool increased their learning. The researches had similar results like Kahoot! can increase enthusiasm for attending lectures and helpful for student lecture activities (Kalleny, N,K., 2020; Romadhon, 2022; Setyawan, F. F. N., & Hidayat, N., 2021; Wirani, Nabarian & Romadhon, 2022). There have been several studies that suggest that Kahoot! can increase student engagement and motivation. Biçen and Karakoyun (2018) found that Kahoot! increased student motivation and engagement in a college-level programming course. Méndez and Slisko (2013) also have found a positive effect of this tool for instance, classroom dynamics, motivation, social interaction, and attention. Our data showed that Kahoot! can increase student engagement and motivation. Especially students stating they need to contact each other somehow. They stated that Kahoot! helped them to socialize and improved their engagement and motivation. Researchers found that Kahoot! improved student engagement and motivation in the Coronavirus pandemic (Dyannah, M, 2021; Martin-Somer, M. at all, 2021; Tetep, T. and Arista, Y. 2022; Toma at all, 2021). Overall, these studies suggest that Kahoot! can be an effective tool for increasing student engagement and motivation in a variety of educational settings.

As a result, the transfer of university lectures to remote due to the pandemic situation has been detrimental to students. They stated that "they were on the screen; they were online but they were not really there". The pandemic produces a decrease in their interest in studies and in their degree of learning. The data showed us the 15-week interactive, gamified lesson plans engaged the students. A large number of students found the use of Kahoot! a very useful tool for learning and engaging in the lesson. They also felt emotionally comfortable, and happy, and experienced an educational process without stress and having fun. Based on our research results, using such tools for distance education seems to have many benefits.

Suggestions:

1. This qualitative study was conducted in a single institution; therefore, caution should be observed in extending the findings to other populations.

2. This research specifically explores experiences with one digital educational tool. Future studies could investigate experiences with multiple digital educational tools.

3. This digital tool can be used in other courses.

Conflict of Interest

There is no conflict of interest in this research.

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