



# Online Learning Evaluation (Kahoot!) As A Motivational Tool For Students Learning

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## ABSTRACT

We live in an era in which technology develops and evolves every second, making it important to explore its application in teaching and learning outcomes. Traditionally, educators have used passive tools and techniques to deliver information and course materials. However, the spread of technology in the field of education has been followed by the use of various tools in the classroom, such as Kahoot!, a game-based learning platform. This study showed that implementing Kahoot! in an undergraduate course, Seminar and Presentation Skills, at Sultan Qaboos University increased students' motivation and engagement. Overall, 70.2% of students stated that Kahoot! increased their interest in the course and enjoyment of the class atmosphere. About 64% of the students also appreciated the real-time assessment of their performance in the classroom. The use of Kahoot! improved key skills in students' attention, creativity, and critical thinking. This study could inspire educators and college instructors to use active learning tools to optimize the learning outcomes of their courses.

**Keywords:** SQU, Kahoot!, student engagement, learning motivation, active learning, Oman

## Introduction

Technology has transformed every aspect of our lives, with students becoming more savvy and engaged in technology. We live in an era that requires us, as educators, to deeply consider how to transfer knowledge and information to our students, as education plays a crucial role in preparing students for their future adult lives. Generally, students feel more satisfied during face-to-face teaching, as they tend to gain more knowledge through this learning mode (Stevenson et al., 2022). Therefore, tools such as Kahoot! are being used in face-to-face classes to increase students' satisfaction during the class. During the COVID-19 pandemic, most classes were transferred to online modes, prompting a rapid shift to online teaching for higher education students (Lepp et al., 2021). Regardless of the circumstances, educators are utilizing various teaching methodologies to maximize student learning by increasing students' participation, attentiveness, motivation, and satisfaction while decreasing their anxiety about learning. Teaching methods now include game-based pedagogical systems.

Globally, it has become necessary to adapt to evolving technologies and their influences in changing education and in modifying how people learn and interact. Despite the increasing demand for information and communications technology use in educational institutions, doubts persist regarding teachers' competence and confidence in utilizing for information and communications technology, necessitating the need to explore various teaching techniques for grasping students' attention, motivating them, and maximizing the benefits of their technological awareness and skills. There has been an increase in dialogs about the traditional teaching style not being the best teaching technique in helping students obtain knowledge or enabling them to use that knowledge. For example, researchers have shown that traditional lecture-based classes have failed to involve students meaningfully in their education (Kovarik et al., 2022). Most universities and higher education institutions are calling for more integration of active learning methods and the exploration of innovative approaches in teaching practices and styles (Chiu et al., 2022), and Sultan Qaboos University (SQU) is one of those institutions.

According to Smith et al. (2021), "Active learning engages students in the process of learning through activities and/or discussion in class, as opposed to passively listening to an expert (p.20)." Such teaching techniques

focus on emphasizing higher-order thinking by demanding teamwork. Therefore, active learning approaches require educators to shift their mode of teaching to be less teacher-directed and more toward students' involvement and engagement, as the application serves as a powerful tool in education. Educators could integrate various approaches to make lectures interactive, for instance, by creating smaller groups within the classroom, asking questions, using audience response systems, introducing projects that make students work in teams, organizing debates, using simulations and role-plays, using video and audiovisual aids, and using effective presentation skills (Hernández-de-Menéndez et al., 2019). Research has shown that students who are involved in their learning are more likely to keep what they learned compared to those who learn through passive learning modes (Bavishi et al., 2022). Murillo-Zamorano et al. (2019) emphasized that students' engagement in lectures and classrooms improves their understanding and academic outcomes.

Various studies have demonstrated the importance of integrating game-based learning as an alternative learning tool to traditional learning methodologies (Garza et al., 2023). Therefore, educators are eager to create learning experiences for their students. For example, the blended learning approach used by instructors includes the use of games (gamification) in their pedagogical practices (Saleem et al., 2022). Gamification in learning encompasses game design elements in non-game environments (classrooms) with the intention of motivating learners' involvement and engagement to positively improve their learning outcomes (Holbrey, 2020). As educators and witnesses of how technology evolves and colonizes our everyday lives, it becomes important to acknowledge the challenge that we face in keeping students motivated, engaged, and concentrating over time in the lecture. Their devices become a part of their bodies that they cannot leave, or they may feel isolated and not connected to the rest of the world if they leave for a while. This has created a burden on educators, as we feel students are not motivated, and their learning outcomes could be reduced, or they may no longer enjoy the class environment and atmosphere (Ferrer et al., 2020). The big classes and the student's distraction due to their focus on their phones became big challenges in higher education as interaction with students reduced (Bovill, 2020). There is various research evidence indicating the positive outcomes of gamified learning styles. For instance, Li et al. (2023) reported that the use of gamification tools in learning resulted in significant positive effects on cognitive, motivational, and behavioral learning outcomes. Similarly, Kalogiannakis et al. (2021) revealed that gamification tools have a positive impact on students' learning achievements. Remarkably, these studies demonstrated motivation and enjoyment and improved their learning outcomes.

As educators, we need to think about how to bring students' focus and interest to the classroom more than on their phones. Nowadays, the education system is demanding the integration of innovative technology to keep up with rapid innovation and development. Therefore, educators have a tendency toward the integration of technology, for example, the gamification approach in their classroom (Murawski et al., 2019). There are various gamified applications that can be used within the classroom, such as Edmodo, Flipgrid, Top Hat, and Kahoot!, that aim to improve learners' performance and engagement (Zainuddin et al., 2020). Kahoot! has become a very popular game-based learning platforms used across the world and by 50% of US K–12 schools and students (Charbonneau, 2018). Kahoot! is reported to serve as an entertaining learning activity and plays a role in increasing learners' motivation, engagement, and perceived learning (Alawadhi & Abu-Ayyash, 2021). Kahoot! was developed in 2012, and one aspect of its usage is to evaluate students' understanding (formative assessment) to help transform the class into a game show by increasing the interactivity and engagement of the students (Zainuddin et al., 2020). It provides a different style of assessment from traditional practiced activities because it is based on a game-based student response system that helps in changing the classroom into a game show (Nicolaidou, 2018). The game-based student response system has shown positive outcomes in motivating students in their learning, encouraging students' engagement, improving learning outcomes, and assisting in classroom discussions and dynamics (Sukowati & Sartono, 2020). For example, Martínez-Jiménez et al. (2021) examined the implications of Kahoot! gamified students' experiences and performance in various management courses at the University of Jaen, Spain. The study revealed that when Kahoot! was used, the students demonstrated better academic results with a lower number of failures. Moreover, a study conducted in biology classrooms involving pre-university students in Malaysia showed that Kahoot! enhanced students' engagement and motivation by attracting them to participate in the classroom (Asniza et al., 2021).

### Study Significance

Even though educators recognize the value of preparing the younger generation for the fast digital boom, some understanding has not been consistently reflected in teaching practices. Therefore, integrating technologies effectively into education requires addressing educators' attitudes and practices. The balanced usage of technologies with active, engaging strategies is crucial for enhancing student learning and digital benefits. Since the applications of technological platforms, such as Kahoot!, and their impact within the classroom have not been studied in Oman, this study aims to explore the effect of the gamification approach on student perceptions by using the interactive game-based learning environment Kahoot! in the Seminar and Presentations Skills course (CAMS3000) at SQU, Oman.

## Study Approach

### Setting

This study was conducted within the Seminar and Presentation Skills course (CAMS3000) offered to undergraduate students. This course served as a core course for all undergraduate students at the College of Agricultural and Marine Sciences. The class consisted of 27 students who were in their second or third years and were non-majors at SQU, Oman. Students were required to enroll in this course to improve their academic writing and presentation skills. The class size consisted of 27 students. This course usually featured low participation, low academic experience, and a lack of interest, as the class met at the end of the day. Further, the students continually used their mobile phones in class, which caused them to lose their attention and focus during class time. Thus, it was necessary to look for new techniques to bring the students' attention back to the classroom and keep them motivated and engaged. In 2022, SQU encouraged faculty members to implement active learning techniques and styles in the classroom as the key learning environment for the offered courses. Each faculty member could choose an approach that suited their course goals and learning outcomes.

### Instrument and data sources

To gather data on students' perceptions about their learning experiences regarding the implemented active learning and to assist their understanding and learning outcomes in the class, the Kahoot! platform was used to provide real-time assessment and feedback. Various assets and activities were prepared using the Kahoot! platform, such as multiple-choice quizzes, true and false questions, cloud word activities, polls, and puzzles. These tools were used as media to help the students get real-time feedback on their progress and to assess their comprehension of the class materials at the end of each class. The duration and length of the questions varied depending on the topics discussed and the activities designed for the class meetings.

### Data collection procedure

The research survey aimed to identify the experiences that most students felt while playing Kahoot! in the classroom. The survey consisted of 21 items using a 5-point Likert scale ranging from 1 to 5, representing the following values: Strongly Agree: 5 points, Agree: 4 points, Not sure: 3 points, Disagree: 2 points, Strongly disagree: 1 point. These questions were organized under five main categories: attention and focus (4 items), interaction and engagement (4 items), motivation and competition (5 items), learning and knowledge retention (4 items), and fun and enjoyment (4 items). The survey was administered to 27 students in the classroom. Close-ended statements were also included in the survey, such as: I was excited while playing the game, Kahoot! provided me with a better learning experience, and I was able to assess my learning in real time. Furthermore, the students reported their perceptions and experiences of the platform.

## Results and Discussion

To determine the perceptions of the use of the Kahoot! platform, the main findings of the survey were analyzed, and the percentages were calculated. This section presents the main findings of this study with reference to the research purpose.

### Quantitative Data Analysis

Statistical data analyses were performed using Excel 2013. Cronbach's value was used to assess the internal consistency of the survey content. The Cronbach's value of the survey was  $\alpha = 0.88$ , showing good reliability in the internal consistency of the survey.

**Interaction and Engagement:** the survey results showed that 44% of the students strongly agreed with the use of Kahoot! They felt enthusiastic and were more engaged in the classroom. In addition, 41% of students agreed with Kahoot! integration. The students emphasized an ability to visualize their comprehension of the materials, which helped them to assess their understanding in real time, as the tool provided quick feedback that helped the students identify their areas of strength and weakness, thus promoting an effective learning process. Overall, 33% of the students agreed that Kahoot! made the classroom interactive and lively. These results show that the students perceived Kahoot! as a useful learning tool for increasing their engagement through the various techniques used to stimulate their discussions and interactions with their peers. This is because integrating the game elements within Kahoot! made the learning experience enjoyable. Zhang and Yu (2021) indicated that Kahoot! had a positive impact on learning outcomes, developing good interaction and collaboration habits between the students, and enhancing the instructors' management of the class. Al Yakin and Seraj (2023) reported that integrating technology within the classroom offered immersive and interactive learning environments that increased student engagement. Their study showed a significant impact on student engagement and academic performance when technology was integrated in the classroom.

**Attention and Focus:** the encouraging results regarding the effectiveness of Kahoot! on university students provide insight into the effectiveness of this technology on students' education and learning outcomes. Our study reported that about 74% of the students stated that Kahoot! has contributed to increasing their focus. This indicates that Kahoot! motivated the students to be engaged and interactive in the classroom. The platform drives them to expand the duration of their attention and focus, which results in a positive effect on their learning outcomes (Licorish & Lötter, 2022). Therefore, the integration and usage of educational games

contribute significantly to improving the quality and experience of teaching and learning beyond what is provided in classical classrooms (Artal-Sevil, 2020). The findings of this study could inform other instructors about the contribution of this tool in increasing the student's learning outcomes and the benefits of using this tool in their classrooms.

**Motivation and Competition:** the survey showed that 52% of the students reported that Kahoot! was very helpful in motivating them in the classroom, and 48% strongly agreed with the statement, "It was fun to compete against my classmates." However, 11% of the students disagreed, and 22% of the students were neutral regarding the statement, which could be attributed to the students facing difficulty in signing up and internet connectivity issues. This indicates that integrating Kahoot! contributed to motivating most of the students. However, the students were thrilled for being recognized on the leaderboard, as 60% of the students strongly agreed, and 20% agreed about feeling proud and happy to see their names in the rank of the leaderboard in Kahoot! Acknowledging the student's achievement in real time during the class has a positive impact on them and their self-confidence. A study conducted by Avrahami et al. (2020) showed that providing workers with the ability to visualize and gain awareness of their own success contributed to improving worker productivity, motivation, dedication, and engagement. It is essential to provide a source of motivation for students, as it could contribute positively to increasing their curiosity to know, act, understand, and acquire skills or values (Filgona et al., 2020). A study conducted on third-grade students exhibited higher motivation in learning science when using the adaptive gamification environment, and the students had a positive reaction to the game elements integrated into their lessons (Zourmpakis et al., 2023).

**Learning and Knowledge Retention:** the survey showed that 67% of the students believed that using Kahoot! helped them in "learning and detecting what they were not able to understand," and 74% of the students reported that Kahoot! "inspired them to keep learning." A study conducted by Janković et al. (2023) involving 72 students compared the gamified learning environment using Kahoot! and Quizizz in science classes. The study results showed that using Kahoot! was more effective in creating conceptual understanding than Quizizz, as the student's retention of the learned content with Kahoot! significantly outperformed that of Quizizz. This is because the students were more able to maintain their concentration during the lesson when Kahoot! was integrated into the class. A study used gamification to measure the effects of the Kahoot! online platform on the student's attention, concentration, and creativity in a physiotherapy class. The results of the study highlighted the positive benefits of using Kahoot! as a gamified teaching tool for student engagement and cognitive abilities. Integrating Kahoot! into the educational environment stimulated various cognitive aspects and enhanced complex skills (Aibar-Almazán et al., 2024).

**Fun and Enjoyment:** the analysis of the survey showed that Kahoot! created a positive learning experience, as 73% of the student's reported fun, enjoyable experiences, and they felt entertained in participating in the Kahoot! sessions. About 67% of the students strongly agreed that they felt "proud and happy" when their names were recognized in the classroom. A study conducted by Marín-Vinuesa and Rojas-García (2024) demonstrated the effectiveness of the Kahoot! interactive learning platform in increasing students' motivation through game-based learning. Another study reported that Kahoot! helped the students to understand the material more quickly and fostered creativity due to its interactive and fun nature (Rahmadani & Saman, 2024). Various studies have highlighted Kahoot! gamification features that promote students' fun learning experiences and help them witness the acknowledgment of their efforts and achievements (Benhadj et al., 2019). Plump and LaRosa's (2017) study revealed that due to the Kahoot! game-based nature, the platform positively influenced student engagement, motivation, and learning outcomes. Further, immediate real-time feedback with the Kahoot! platform allows instructors to tailor their teaching based on the information on student understanding garnered during quizzes (Yadav et al., 2022). This creates a more customized learning environment for the students, as well as an enjoyable and fun learning environment.

## Conclusion

Students' motivation is a critical part of success in education and later life, but most of the time, it has often been overlooked by educators. This study showed that motivating students during the teaching and learning process has a huge positive effect on students' learning outcomes, retention, and achievement. Creating a motivated learner can highlight the educator's efforts to improve the quality and effectiveness of their teaching tools and styles and, consequently, improve students' achievement. Therefore, this study provides educators with valuable information on students' motivation to learn. Understanding how each of the motivational goals, types, and dimensions influences learning will place educators in a better position to help support students' academic learning. This study recommended providing an enjoyable classroom to enhance students' attitudes toward learning and emphasizing the need for continuous professional development and innovative teaching approaches to bridge the gap between technology and effective learning experiences. This study showed that utilizing the Kahoot! exercise in the classroom significantly influenced students' grades and retention. The study findings suggest that using Kahoot! can be optimized depending on the method of implementation within the classroom environment. This study used Kahoot! frequently during the course; it showed a reinforcement and retention of knowledge, as well as learning enjoyment, which ultimately improved the students' grades. The implementation of Kahoot! demonstrated its ability to motivate students to study, assist them in developing self-directed learning, and help them focus on important concepts. In addition, the findings

revealed the value of Kahoot! as a predictive tool for formative assessment in the classroom. Given that the younger generation, the digital generation, has huge exposure to virtual tools and other technological applications through their devices, it is equipped with various technological skills. Thus, it is imperative that instructors embrace and commit to renewing teaching methodologies and approaches to improve the quality of teaching and encourage students' participation and motivation in the classroom. Game-based learning appears to be an alternative teaching approach for improving the teaching–learning process. Various studies have documented the benefits of game-based learning in promoting student participation and creativity and improving students' motivation (Safitri et al., 2023). Through the use of various interactive teaching platforms, Kahoot! provides opportunities for a profound, thorough enhancement of students' cognitive skills. The findings also highlight the significance of dedicating adequate time for this type of activity to expand students' development and capabilities.

### Limitation

This study sheds light on the potential benefits of gamified learning environments for CAMS 3000 students, emphasizing the role of the Kahoot! platform in enhancing student engagement, understanding, and enjoyment. Despite the huge positive feedback from the students, some students were unsatisfied while participating in Kahoot! This could be attributed to various reasons, such as internet connection issues, students not having the appropriate device, and some pace aspects of the game. These issues could be mitigated by addressing the challenges faced with the integration of Kahoot! into the classroom.

This study showed the potential of Kahoot! for educators. However, the Kahoot! free version provides limited access to the available features for up to three free features. The institution may need to pay on a monthly or annual basis to use the full range of available features of the Kahoot! platform. The free version not only limits the available features but also limits the number of students up to 10.

### Future research

Despite the positive contribution of Kahoot! in motivating and encouraging students, future studies should include larger samples to further explore the effectiveness of Kahoot! in teaching and learning outcomes. Conducting similar studies during different times of the semester with various courses could yield better insights regarding students' perceptions of the Kahoot! platform in their learning and motivation and its contribution to their academic achievement.

### Data Availability

Data will be provided on request.

### Conflict of Interest:

The authors declare that they have no conflict of interest.

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