

# Perspectives On Game-Based Learning Within The Higher Education Sector

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## ARTICLE INFO    ABSTRACT

This study investigates the perceptions of faculty members on the integration and implications of game-based learning (GBL) in higher education, specifically within the United Arab Emirates (UAE). It aims to understand how GBL influences student motivation, engagement, and the achievement of learning outcomes, thereby offering a faculty-centric perspective on the effectiveness of GBL strategies in enhancing educational experiences at the tertiary level. The research methodology employed semi-structured interviews with 18 faculty members across various disciplines in UAE universities. These interviews were meticulously analysed through open coding, selective coding, and axial coding using NVivo software. The findings indicate a strong consensus among faculty members on the positive effects of GBL on student motivation and engagement. A crucial insight is the necessity for GBL tools to be directly relevant to subject matter and aligned with specific learning outcomes. Despite these benefits, challenges such as the need for game design to meet educational objectives were noted. The study highlights the potential of GBL to transform learning experiences in higher education by fostering an engaging, interactive, and motivational learning environment. It suggests that for GBL to be effectively integrated into higher education curricula, there must be a concerted effort to develop subject-specific games that are pedagogically sound and aligned with learning outcomes. This research contributes to the academic discourse by focusing on the relatively underexplored area of faculty perspectives on GBL in the higher education sector of the UAE. It extends the understanding of GBL's applicability beyond K-12 education, addressing a gap in the literature regarding its use and effectiveness in tertiary education. Through its faculty-centric lens, the study provides invaluable insights into the challenges and opportunities of implementing GBL in higher education settings, thereby offering a foundational framework for future research and practice in this emerging field.

**Keywords:** Digital education, Game-based learning, student motivation, student engagement, student learning outcomes.

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## Introduction

Game-based learning (GBL) is arguably an effective pedagogical strategy because numerous studies have concluded that it has a positive impact on students' engagement and motivation (Hamari et al., 2016; De Freitas, 2018; Eltahir et al., 2021). However, most of the studies that are available focus on K-12 sector students; meaning there is a lack of studies which look specifically into the Higher Education (HE) sector. In addition, mostly these studies have focused on students' perceptions of GBL, neglecting faculty views. The authors of this paper are based in the United Arab Emirates (UAE), and in recent years, there has been an increased number of empirical studies investigating various aspects of digital education in the Middle East (Elsawah and Charles, 2023; El Haddad and Charles, 2024; Hill, Abu-Ayyash, and Charles, 2023). Inspired by these studies, this paper looks into GBL from the perspectives of university-level faculty located in the UAE. Ultimately, the purpose of this study is to examine how faculty members use digital GBL in the HE sector and how this may impact student engagement and motivation in UAE universities. This study aims to understand

the current use and integration of GBL tools by faculty members in undergraduate programmes; accordingly, it looks at the impact on students' motivation and engagement from the faculty perspective. Furthermore, this research attempts to investigate perspectives on how faculty might improve their ability to help students' attention and how to apply this strategy most effectively in HE courses.

### Literature Review

Studies on the effectiveness of digital GBL for education have been carried out in a number of academic and professional contexts, including the study of English language teaching, mathematics, nursing, and other educational fields. Notably, the majority of these studies concentrate on students' perspective on game-based learning, and it seems there is a lack in studies on faculty perspective on game-based learning (Alam, 2022). Two terms that are frequently used in education are "gamification" and "game-based learning". The two phrases can cause confusion for many individuals who believe they have the same meaning. Gamification is the use of games in non-gaming contexts, whereas game-based learning uses games to improve learning (Al-Azawi, Al-Faliti and Al-Blushi, 2016). Although they both use game aspects, gamification and game-based learning take different approaches. Gamification is the process of making the entire learning process into something that resembles a game, while game-based learning includes games as essential elements of a larger learning process. An example of game-based learning tools is Kahoot, where the teacher will create the quizzes for the course in a gamified way, then there will be a leaderboard and students will be able to see who is in the top of the leaderboard. Kahoot users increased by 5 billion during the coronavirus pandemic due to the shift to online learning (Kahoot!, 2022), which shows the high demand toward game-based learning. Others examples are Quizlet and Quizzex, which are also game-based assessments; these websites provide teachers with pre-created gamified quizzes that (s)he can edit based on their needs.

Human experience is fundamentally shaped by motivation; both adults and children act out of intrinsic rather than extrinsic motivation. According to the self-determination theory (Deci et al., 2017) intrinsic motivation is driven by the human need for autonomy, competence, and achievement. That is why this study looks at the impact of game-based learning on motivation, which is a fundamental factor for the success of educational experience. Another aspect is students' engagement, because engagement comes after motivation; while motivation encompasses inclination, energy, emotion, and drive, which are essential for successful learning, productive work, and achieving goals. Essentially, engagement pertains to the observable behaviors that reflect these inclinations (Martin, 2007). A study by Kennedy (2020) proposes the adoption of inquiry-based learning and simulation-based learning as effective strategies to enhance both behavioral and cognitive engagement. These methodologies can be seamlessly integrated into game-based learning, allowing instructors to design educational games for students utilizing gaming platforms with problem-solving capabilities that can make the learning more engaging.

A variety of studies have been conducted to measure game-based learning's impact on students' motivation, engagement, and performance. A research study conducted by Gamlo (2019) in Saudi Arabia, focussed on game-based learning's impact on motivation. The research involved first-year students (18 to 20 years old) in a traditional classroom setting, using game-based learning apps alongside traditional methods for English language learning. The study found that students showed increased motivation and improved performance when supported by game-based learning tools (Gamlo, 2019). In the UAE, the government supports the use of technology in learning (Miles et al., 2021), offering robust infrastructure to HE institutions. A study by Alawadhi & Abu-Ayyash (2021) on Kahoot, which is a game-based learning tool, used in first-year university English classes revealed enhanced student motivation and engagement. Employing a mixed-methods approach with qualitative and quantitative data (interviews and questionnaires), the study's goal was to measure student satisfaction with Kahoot. Despite the observed improvements in motivation and engagement, interviews indicated that students did not perceive significant enhancements in their performance (Alawadhi & Abu Ayyash, 2021).

Another study in the UAE at Ajman University, Eltahir et al. (2021) compared game-based learning and traditional methods for Arabic grammar. They found that game-based learning positively affected engagement, motivation, and performance, but students' computer skills influenced the outcomes. Those with better digital skills showed more improvement in motivation, engagement, and performance. A qualitative study by Minton & Bligh (2021) in the UAE's higher education sector found that students experienced less stress and greater enjoyment with a game-based learning platform for assessment compared to traditional paper-based assessments. Indeed, most of the studies focused on students' views of game-based learning and there are a lack of studies measuring instructors' perspectives (Charles and Hill, 2023). However, a study by Huizenga et al. (2017) in the Netherlands discovered that teachers assess their teaching based on their class experiences. The same study found that teachers generally believed using game-based learning improved student engagement, motivation, and performance in secondary school across subjects. Conversely, Bourgonjon et al. (2013) found faculty acceptance of digital games depended on their digital literacy. Less experienced faculty with technology were less accepting, while more experienced ones were more likely to accept game-based learning. Becker and Jacobsen (2005) suggest teacher willingness impacts game integration (cited in Bourgonjon et al., 2013). Despite numerous studies on game-based learning's impact on students, there's a gap in research on faculty perceptions in the UAE's HE sector (Charles, 2021). Given the faculty's crucial role in

both online and face-to-face classrooms, there's a need to explore their perspective on game-based learning effectiveness.

### Methodology

This study employs qualitative research to explore UAE faculty perceptions of game-based learning. The qualitative methods look into motivations and reasons underlying actions, providing a profound understanding of intrinsic attitudes and driving forces of human behaviors (Rosenthal, 2016). This study uses semi-structured interviews, a data collection method that allows researchers to capture body language, emotions, beliefs and perceptions (Flick, 2018). The interviews helped the researchers grasp faculty perspectives on game-based learning in higher education, allowing insight into opinions through body language. The interviews were conducted face-to-face in-person, and they enabled participants to freely share ideas and thoughts on game-based learning, offering a deep understanding of their perceptions (Stolle, 2020). The sample for this research were 18 faculty members teaching in higher education in the UAE, and the participants were selected from different disciplines including computer science, multimedia, general studies and English communication. The sample was chosen through purposive sampling, selecting members based on the study's objectives. Also known as deliberate or judgmental sampling, this technique focuses on individuals likely to use game-based learning and offer detailed insights. When the representative individuals form a small fraction of the population, purposive sampling, as suggested by Bhardwaj (2019), is suitable. The researchers, using their expertise and familiarity with the target demographic, was confident in the approach's alignment with the study's needs.

Interviews were arranged in-person and each faculty member was allocated 20 minutes for detailed responses to seven specific questions. The interviews were conducted over two months from March 2023 to April 2023, and participants' initial approval was obtained via email before the study. Before the interviews began, all the participants were asked to sign an ethical consent form to ensure of their approval and the research's integrity. The interview questions aligned with the research objectives and theoretical framework, validated through discussion with experienced peers. The researchers faced some scheduling challenges due to full-time faculty commitments, but despite time constraints, efforts were made to gather comprehensive responses, with some participants providing concise answers, necessitating further inquiry for additional details.

Qualitative data analysis provides structure and insight to extensive textual data, but it necessitates the researcher to process and code the collected data. This coding process can be time-consuming and demanding in terms of effort (AlYahmady and Al Abri, 2013). Therefore, the researchers decided to use Nvivo software for the data analysis which is used to analyse qualitative data allowing researchers to understand the themes that emerged from the interviews. Initially, all the audio recordings of the interviews were transcribed using Temi online web service for audio transcription. The codes were made using the Nvivo software. Initially, the interviews transcripts were inserted in the software, and then the researchers started to create the codes in the same software. Qualitative research data analysis involves open coding, axial coding, and selective coding. Open coding is the initial stage, identifying concepts and themes. Axial coding refines and categorizes emergent themes. Selective coding, the third level, integrates organized data categories from axial coding to form meaningful expressions, advancing the analysis by formulating a cohesive story or case based on higher levels of abstraction (Flick, 2009, cited in Williams and Moser, 2019).

### Discussion of Results

The research looks at the impact on student motivation and engagement when game-based learning is used. It also explores how game-based applications support the achievement of learning objectives. The following themes emerged from the data analysis: theme 1: faculty experience with game-based learning, theme 2: the support of game-based learning on learning outcomes, theme 3: the impact of game-based learning on motivation, theme 4; the impact of game-based learning on engagement.

**Theme 1: Faculty Approaches and Experience with Game-based Learning.** After analyzing faculty responses on integrating game-based learning, the main tools used by the faculty that emerged from the analysis were Kahoot, Quizziz and Quizlet. Three significant themes emerged. These themes, reflect how faculty are using game-based learning in their classes and the benefits they gain while using game-based learning and the most accruing answers are: Assessing student understanding, fostering team building and enhancing student engagement. Most of the participants agreed that they mainly assess student understanding of the course material as a non-formal approach, In addition, the majority agreed that they use game-based learning to enhance student engagement.

**Theme 2: Faculty Views on Game-based Learning's Impact on Learning Outcomes.** All participants acknowledge that game-based learning helps in achieving learning outcomes. However, they note that existing game-based learning applications do not independently fulfill these outcomes. Instead, they are seen as supplementary tools that reinforce traditional teaching methods, enhancing the learning process. Still, six participants expressed that a well-designed game-based learning tool could fully meet their learning outcomes.

**Theme 3: The Impact of Game-based Learning on Motivation.** The study concludes that game-based learning positively impacts motivation. All participants agreed it significantly boosts student motivation, but some

noted a potential downside which that consistent failure may affect students negatively, reducing motivation. This aligns with the concept of behavioral engagement tied to winning. Intrinsic motivation, driven by personal enjoyment, contrasts with extrinsic motivation, where students engage for rewards. While game-based learning triggers extrinsic motivation, intrinsic motivation is essential, as noted by a participant. Despite concerns, participants acknowledged enhanced motivation and engagement in classrooms using game-based learning, the following factors emerged from their answers: competition, collaboration, fun, and joy.

Theme 4: The Impact of Game-based Learning on Engagement. Some participants confused engagement with motivation when asked about their impact. The researcher clarified the distinction, citing studies highlighting the difference. While motivation involves inclination, energy, and drive for effective learning, engagement refers to the behaviors reflecting these aspects. Despite this distinction, most participants believed that game-based learning's positive impact on learning translates to a positive impact on engagement, assuming motivated students are engaged. Faculty observed increased attention and engagement in group activities, where students discuss and share ideas for correct responses.

### Conclusion

This research explored faculty perspectives on game-based learning in higher education. Findings reveal widespread recognition of its effectiveness, with many applications like Kahoot, Quizziz, and Quizlet. Primarily employed as quiz-based tools for assessing comprehension, the study indicates that game-based learning is mainly used as a supportive, rather than sole, means to achieve learning outcomes. While showing potential, the research suggests games must align with pre-defined learning outcomes to be effective. The research concludes that faculty perceive game-based learning positively impacting student motivation and engagement. Collaborative activities, competition, joy, and fun enhance motivation. Some participants note it may not stimulate intrinsically unmotivated students, and frequent losses may have a negative impact. These findings address the study's third question on faculty beliefs about student motivation and engagement with game-based learning.

Future research should delve into game-based learning's impact on student engagement and motivation in classrooms, providing insights into its specific influences. Additionally, exploring potential negative impacts on motivation can unveil factors hindering motivation, enhancing our understanding. Further studies could investigate key challenges in higher education game-based learning, identifying barriers like time constraints and proposing effective solutions. Subject-specific research may offer valuable insights, especially in disciplines beyond English courses. A mixed-methods approach, combining qualitative and quantitative methods, can enhance research outcomes. Comparative studies on faculty and student perspectives would illuminate differences in viewpoints. This study findings can be employed by higher educational institutions to allocate resources strategically, fostering adoption for an engaging educational experience using the game-based learning strategy. It should be noted that this study did have limitations; firstly, this study's sample was limited to faculty in a specific area, impacting generalizability. Time constraints during interviews, due to faculty's teaching and personal commitments, hindered scheduling and limited interview duration. These limitations must be considered when interpreting findings and their applicability to broader populations. Future research should address diverse samples and time constraints for a more comprehensive understanding of faculty perspectives on game-based learning in higher education.

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