The International Journal of Management Education 24 (2026) 101439

Contents lists available at ScienceDirect

The International Journal of Management Education

journal homepage: www.elsevier.com/locate/ijme

The academic experience in using gamification to facilitate business and management learning: A UK case study☆

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ARTICLE INFO

Keywords:
Gamification
Higher education
Motivation
Facilitation
Student engagement

ABSTRACT

The use of gamification in Higher Education has increased over the last decade, with notable dominance of gamification use within the subject area of business and management. Studies have previously proven that gamification can engage and motivate students in their learning, however there is still some apprehension about its use among staff. Academic staff from a UK Higher Education Institution were interviewed about their experience of using digital gamification in their classroom. Transcripts were thematically analysed with findings identifying that gamification can be time-consuming and staff are often the primary source of technical support should any issues surrounding system navigability occur. The results can help academic staff consider their use of gamification, informing their assessment design when adopting gamified approaches as well as developers of gamified products, who can draw upon the findings to aid their product development. The findings further highlight a need for developers to ensure system functionality is intuitive enough that academic staff do not need provide guidance for functional needs and that their role remains in support of academic theory and evaluation of student experience.

1. Introduction

In a world where some may see day-to-day activities such as learning, exercising, or purchasing products as living in a video game, there is no misconception; their interactions have been intentionally gamified to motivate and engage them in activities (Hamari et al., 2014; Qiao et al., 2025). This is known as gamification, a concept considered to incorporate game design elements and mechanics into non-game contexts (Deterding et al., 2011). Gamification has gained popularity in recent years as organisations and education sectors seek to increase engagement and motivation amongst their target audiences (Sainath & Sai, 2023). Despite its popularity, gamification has faced criticism from some quarters. It is argued that it oversimplifies complex problems and may not be suitable for all situations (Rodrigues et al., 2022, pp. 666–672). Further, it is argued that gamification may not always be ethical and can be used to manipulate people's behaviour for commercial or political purposes (Hyrynsalmi et al., 2017, pp. 1–6). In practice, introducing gamification changes not only how students learn, but also what is expected of academic staff who are responsible for the design, facilitation, and support of these activities.

Due to the broad nature of the subject area of business and management, there is an increasing need to consider how to motivate and engage students in their learning. As a subject, business and management also covers several specialisms within it, including marketing, finance, human resources, and supply chain management, amongst others. Therefore a programme of study that provides

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https://doi.org/10.1016/j.ijme.2026.101439
Received 17 December 2025; Received in revised form 21 April 2026; Accepted 1 May 2026

students with a wide range of information, could be overwhelming. As such, the variety on offer can result in students disengaging with content that they are not interested in (Febriana & Suparman, 2020). This provides an opportunity for educators to use gamification to encourage student learning in content they may otherwise not engage with.

There are various classroom interaction methods to demonstrate educational learning outside of more traditional educational strategies that are increasingly used to aid motivation and engagement. One method is gamification, which consequently allows for a varied application of game features because it is subjective in its definition, implementation, and end-user experience (Huotari & Hamari, 2012). Whilst gamification in education is increasing, there is still some apprehension among staff about using it as a learning method (Duong & Vo, 2024). On the face of it, the apprehension may be for several reasons, from dismissing gamification as nothing more than points and badges (Robertson, 2010) to the nervousness from staff utilising gamification due to digital confidence, or lack of, due to teaching students often coined as *"digitally native"* (Kirschner & De Bruyckere, 2017, p. 136). A 'digital native' is a person who has been born into a world immersed in digital technologies, often considered to be born after 1984 (Prensky, 2001). Their digital exposure has given this rising number of people distinct, even unique traits that set them apart from prior generations' children. Consequently, it is assumed, incorrectly, that they possess inerrant skills and abilities for digital platforms due to their age and place in the digital age.

This study aimed to explore the experiences of academic staff who used digital gamification to motivate business and management students' learning in a UK Higher Education Institution (HEI). The research followed an interpretivist philosophy, with semi-structured interviews being conducted with academic staff who used gamification products in the classroom. The data captured from the staff participants was analysed using reflexive thematic analysis to answer the research question:

How do academic staff perceive their role when facilitating digital gamification in the classroom?

This article defines gamification as the application of digital gamification techniques. Staff engaged with simulation software that incorporated gamification features, including experience points, badges, and leaderboards.

2. Literature Review

2.1. Gamification in higher education institutions

The current generation of students are labelled digital natives (Castillo-Parra et al., 2022), yet there is conflicting research arguing that such skills do not always translate into skills to support academic study (Janschitz & Penker, 2022). Gamification is seen to be an innovative teaching strategy, however, Sobocinski (2017) argues that the difficulties of building and operating a system, primarily digital, may prevent gamification from being widely adopted in HE because of this focus and reliance on technology. Gamification is seen as an opportunity in HE to ensure that students actively participate in the classroom and have enough remit to learn from their decision-making (Espinosa, 2016). This is considered a modern and more impactful way of learning than traditional didactic learning, whereby a teacher presents, and a student takes notes (Osorio, 2016).

Whilst academic staff have their reasons for using gamification, seeking students' views is also necessary. In their study, Caliatto and da Silva Almeida (2020) provide insight into students' perceptions of traditional teaching, with perspectives that the existing teaching model is inadequate and the learning process is severely constrained. They attribute this to the absence of several factors, such as motivation, communication, collaboration, participation, and fun, which affect their perceived well-being and satisfaction in the course. With students acknowledging that the current means of teaching are outdated and restrictive (Caliatto & da Silva Almeida, 2020), it justifies academic staff seeking other ways to deliver their learning content, i.e. through gamification. However, the implementation of gamification is challenging. Hidalgo et al. (2018) surmises that gamification demands careful planning and a focus on content. The teacher must possess sufficient pedagogical and technological knowledge to build the course design in detail whilst coherently creating content and supporting materials. Still, its execution must be properly conducted to ensure student understanding and expectations are met. This view is supported by Mindt and Rieckmann (2017), who recognise the necessity of an academic staff member's competency as a key factor in the success of gamification.

2.2. Gamification and academic staff

Whilst gamification in education is widespread, there is still some apprehension when using it as a learning method with some arguing that the overuse of technology can be seen as a barrier to adoption (Sobocinski, 2017).

The idea of 'digital natives' being taught can have two effects on academic staff. Firstly, students' perceived advanced technological skills could give rise to perceptions that young people are better at using technology for academic reasons than their teachers. As a result, academic staff may experience pressure to change their teaching strategies and add more technology to their lessons to meet the alleged needs of students. Therefore, the nervousness of academic staff due to pressure to change could emerge (Kirschner & De Bruyckere, 2017). The alternative argument is that rather than generational inequalities, age-related differences in technology use may be best understood regarding differing responsibilities or classroom expectations, such as students being active participants or staff being the lead facilitators. These assumptions are important because they can influence how confident academic staff feel when introducing technology-based teaching approaches, particularly with gamification.

With the notion of the definition of 'digitally native' in dispute (Romero et al., 2013), it can be concluded that a balanced strategy in the classroom is needed to consider both the potential advantages of technology in education and the fact that generational or age-related characteristics do not influence digital skills and talents. Therefore, academic staff may need to change how they teach and incorporate technology where necessary to increase engagement (Huotari & Hamari, 2012). However, they should also be aware of

their expertise, which brings value to students in the classroom. Elements such as the learning environment and meta-cognitive knowledge are instilled in academic staff and are not replaceable with technology, irrespective of the participant's competency with digital products (Kirschner, 2015).

Some have attempted to provide explanations for behaviours when adopting technology. Davis (1989) developed the Technology Acceptance Model (TAM) signalling that either a persons Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) determines their intention. TAM proposes that ease of use is a critical determinant of technology acceptance.

TAM has been widely applied and validated across different domains, including education, where it has been used to explore instructors' and students' acceptance of educational technologies (Šumak et al., 2011). In HEIs, TAM provides a useful lens for understanding how staff members evaluate the adoption of gamification, particularly when balancing pedagogical benefits with the perceived difficulty of implementation (Teo, 2011).

Gamification is becoming increasingly prevalent in HE, and research indicates that its popularity will likely persist (Ameen, 2026). As a result, academic staff must be mindful of potential drawbacks related to student engagement, motivation, and knowledge retention when incorporating gamification into learning activities. This applies whether gamification is used to enhance formative assessments in the classroom or as part of summative evaluations, regardless of the overall positive perception of gamification (Kwon & Özpolat, 2021).

2.3. Why gamification is being used in HEIs

Labour market predictions continue to indicate a significant decline in the demand for occupations requiring low qualifications and an increase in those requiring high qualifications (Vogler-Ludwig et al., 2016). In the next several years, a substantial oversupply of unqualified workers and a declining number of graduates from HE is expected (Bocock et al., 2025). Although there are more students than ever, many leave HE before graduation. Changes to pedagogical practices, like gamification, are considered by academics to ensure optimal student engagement and motivation to mitigate the likelihood of withdrawing from university.

The UK HE sector in 2021/2022 enrolled a combined 2.75 million students, of which there was a 6.4% student withdrawal rate. HESA (2022) states that this is on the increase year on year. There are different preconceptions of the term pre-completion leavers with a negative connotation, such as 'dropout,' compared to a more positive or neutral stance of 'withdrawal' (Larsen et al., 2012).

Looking more closely at when a student is enrolled on a course and during their studies, the motivation and engagement of the student play a large part in their attainment. Likewise, the academic staff's content for students is equally imperative for motivation and engagement success in the classroom. Student engagement in UK HE, notably regarding interaction with staff, has gone from 38% in 2018 to 33% in 2021 (Rowan & Neves, 2021).

The National Student Survey (NSS) provides final-year students with an opportunity to evaluate their time at university. The results are significant for HEI leadership in how they operate both strategically and operationally. There is a need for HEIs to ensure a positive NSS result from students, given that scores are a key decision-maker for prospective students (Burgess et al., 2018). Additionally, there has been particular focus on improving NSS scores regarding 'Assessment and Feedback' (Fielding et al., 2010). Focusing on feedback has a positive impact on students' motivation (Peng et al., 2012), suggesting why this is a high priority for HEIs.

Gamification has been consistently linked to the development of a wide range of student skills across higher education. Studies show that gamified activities strengthen decision-making and problem-solving abilities, particularly when students are required to navigate simulated environments that mirror real organisational contexts and reveal the consequences of strategic choices (Csikszentmihalyi, 1990; Peng et al., 2012). The interactive and challenge-oriented structure of gamified tasks enhances cognitive engagement, enabling students to exercise analytical reasoning, experimentation, and the application of theoretical constructs in authentic scenarios (Nakamura & Csikszentmihalyi, 2001; Whitton & Whitton, 2011). Gamification also nurtures key social and collaborative skills, as mechanics such as group challenges, team-based missions, and leaderboards foster communication, cooperation, and peer interdependence (Vogel et al., 2006; Hamari & Koivisto, 2014). In addition, opportunities for self-expression, feedback, and progression support the development of self-regulated learning, including autonomy, reflection, and adaptability (Alabbasi, 2018; Ryan et al., 2006). By providing an environment where students iteratively test ideas, receive immediate feedback, and adapt strategies, gamification contributes to the cultivation of skills essential for contemporary business and management graduates, such as teamwork, critical thinking, and reflective judgement (Deterding et al., 2011; Raja, 2018).

3. Methodology

The participants consisted of staff members at a UK higher education institution who had implemented gamification within their classrooms. Out of the fifteen identified staff who utilised gamification during the first semester, eleven consented to take part in semi-structured interviews. The study adhered to established guidelines indicating that a sample size of six to twelve participants is optimal for phenomenological research (Guest et al., 2006). Staff were selected through purposeful sampling based on their experience with digital gamification, restricting participation to those who had directly facilitated its use. Semi-structured interviews were conducted over 40-50 min. Staff in this institution opt to use digital gamification due to the scalability in the large cohorts they teach. In addition, the consider the use of gamification to aid experiential learning, a key principle in the business school in which they are teaching in.

Gamification was used across several programmes of study in business management disciplines up to and including; Business Management, Marketing and Human Resources. Gamification was used to simulate business situations across one semester in their seminars. Students were then assessed on their reflections of decisions taken in the simulation.

Staff experience level was considered important for understanding variation in how gamification was perceived and implemented

particularly because gamification's effectiveness can be shaped by how it is facilitated in practice (Chernikova et al., 2020). In addition, recognising experience as a contextual factor aims to strengthen the study's practical contribution by highlighting the importance of academic development, peer support, and pedagogical confidence in sustaining effective gamified teaching. Participants ranged from first-time facilitators to colleagues with several years of established practice, in the hope that there created a natural contrast in confidence, preparedness, and pedagogic interpretation.

Other methods, such as focus groups with staff were considered. Focus groups allow people to share ideas, clarify views, and make connections they may not have made individually (Morgan, 1996). Additionally, a group dynamic can also create the potential for more spontaneous responses (Stewart & Shamdasani, 2015).

However, the lead researcher was aware that dominant voices can overpower others in a group discussion (Smithson, 2000). Reflecting on the existing literature regarding digital confidence amongst staff, the researchers were mindful that a more confident staff member could dominate the conversation over others. Semi-structured interviews allowed the conversation to be tailored to the individual, particularly in a potential scenario where the participants reflected on their confidence in facilitation. Furthermore, semi-structured interviews allowed the conversation to go in unexpected directions based on the participants' unique perspectives. Using this method, as opposed to questionnaires, reduced the assumption that questionnaire outcomes are definitive, allowing the researcher to probe further to generate a new topic in an interview (Gray, 2014).

The semi-structured interview questions (Appendix A) were developed to explore staff experiences, perceptions, and practices relating to the use of gamification in their teaching. To construct these questions, the study drew directly on the theoretical foundations established from the theories of Thiebes et al. (2014) with their *Gaming Mechanics and Dynamics* and Deci and Ryan (2000) as well as the acknowledged need to understand how academic staff interpret, facilitate, and support gamified learning in practice. The questions were therefore designed to encourage participants to reflect on their understanding of gamification, the pedagogical choices underpinning their use of games or simulations, and the factors that enable or constrain their ability to implement such approaches. Open-ended prompts were intentionally crafted to allow staff to articulate their views on preparation demands, classroom dynamics, and the perceived impact on student engagement and learning. This approach ensured flexibility while maintaining a clear alignment with the study's aim to capture rich, authentic insights into the role of academic staff in shaping the gamified learning experience.

Reflexive thematic analysis was used to identify patterns of meaning across the data while recognising the researcher's active role in interpretation (Braun & Clarke, 2022). Rather than aiming for replication, this approach focuses on producing a transparent and coherent account of how themes were developed from the data.

According to Braun and Clarke (2022), reflexive thematic analysis reflects the researcher's interpretive assessment of the data conducted at the junction of the collected data, the theoretical underpinnings of the study, and the researcher's analytical skills and resources. Due to the interpretive nature of the reflective thematic analysis, it is anticipated and often assumed that another researcher would not replicate themes generated by one researcher.

For the researcher to consider the reflections of members of staff and their experience in facilitating gamified experiences in the classroom, it was necessary for an experiential orientation approach to reflexive thematic analysis. This means the analysis focused on how participants made sense of their own experiences, rather than using the data to develop abstract theory. This approach allowed the researcher to appreciate that the thoughts presented by the participant are from a position of internal reflection (Braun & Clarke, 2019). In contrast, a critical orientation approach would have sought to identify patterns and themes from the data provided to generate a theoretical understanding instead of a reflective account (Terry et al., 2017).

Transcripts and audio recordings were kept on the universities' encrypted cloud storage. According to institutional policy and ethical approval guidelines, these materials were deleted after the study concluded. The semi-structured interview transcripts were uploaded and examined using NVivo software, which provided a systematic approach for organising and managing participant data (Major & Savin-Baden, 2012). NVivo was used to organise and manage the data, rather than to automate analysis or generate themes. However, the software restricts certain ways of analysing and interpreting data (Gerrish & Lacey, 2010), as permitted within this study, making reflexive thematic analysis necessary. Themes were constructed as nodes to categorise specific phrases, and, after reflexive review, a main theme was established with initial themes identified as sub-themes, serving as key outcomes of the qualitative analysis.

Transcripts were imported into the software and repeatedly reviewed to foster familiarity before coding began. Early high-level themes were detected based on initial patterns, research questions, and the conceptual structure from Self-Determination Theory and established gamification models. An initial round of coding assigned extracts to provisional categories but remained open to new or conflicting meanings, capturing both explicit surface content and deeper underlying ideas.

Codes were reviewed iteratively for clarity and uniqueness to support analytic transparency and credibility of the findings. Clarity was established by checking that each code had a clear definition and consistent application across the dataset. Uniqueness was ensured by comparing codes for overlap and refining, merging, or separating codes where conceptual boundaries were unclear.

Theme definitions and boundaries were sharpened by determining whether each theme offered a patterned, conceptually meaningful view that explained staff experiences of gamification, and by confirming that each theme addressed a distinct practice element, such as understanding “gamification,” academic acceptance, experiential learning processes, and perceptions of authenticity in simulated environments.

In reflexive thematic analysis, it is appreciated that how often something appears does not necessarily make it more important. In this study, counts were used only to show how widely particular codes appeared in the data, and not to judge their importance. Themes were interpreted based on how meaningful and analytically rich they were, rather than how frequently they occurred. In this study, the researcher assumed an insider role as a member of the same academic institution as the staff participants. This positionality enabled familiarity with organisational practices, shared professional norms, and insight into the teaching environment where gamification was introduced. However, it also posed the risk of allowing assumptions, prior knowledge, and pre-existing relationships to affect

Table 1
Initial core and sub-themes.

Theme	Sub-Theme
Learning Environment	Technical equipment
	Room size
	Access to the room
Definition of Gamification	Uncertainty of practice
	Simulation
	Games-Based Learning
Academic Acceptance	Time to create
	Preparation and review
	Apprehension of use
	Support and guidance
	Dismissive of impact
Experiential Learning	Inclusive
	Caters to the demographic
	Engagement and motivation
	Gamification vs Traditional Teaching
Real experience	Industry insight
	Teamwork
	Skills development

Table 2
Final core and sub-themes with reference count.

Theme	Sub-Theme	References
Definition of Gamification	Uncertainty of practice	9
	Simulation	19
	Games-Based Learning	7
	Preparation and Review	36
	Apprehension of use	18
	Support and guidance	40
	Dismissive of impact	15
Experiential Learning	Inclusive	30
	Caters to the demographic	20
	Engagement and motivation	54
	Gamification vs Traditional Teaching	49
Academic Acceptance	Time to create	17
	Preparation and review	17
	Apprehension of use	18
	Support and guidance	34
	Dismissive of impact	14
Real experience	Industry insight	31
	Teamwork	17
	Skills development	16

interpretation. To address these potential biases, the researcher adopted a reflexive approach throughout the research process, incorporating systematic self-reflection and regular supervisory dialogue. This methodology ensured that the benefits of insider knowledge were balanced by rigorous consideration of bias, resulting in a transparent and robust analysis of staff experiences.

Reflexivity guided the entire analytic process. Supervisory consultations and the maintenance of a reflexive journal provided mechanisms to monitor the influence of the researcher's professional background on interpretation. The final analytical narrative integrated refined themes with relevant data extracts and connected them to quantitative structural equation modelling outcomes and established theoretical literature, thereby presenting a comprehensive account of staff perspectives, adoption, and facilitation of gamification in higher education.

Two reflexive strategies were employed to further mitigate potential bias. Firstly, the researcher maintained a reflexive journal throughout the study to enhance transparency, consistent with its frequent use in phenomenological research (Ortlipp, 2008). Secondly, preliminary findings were reviewed with independent peers to facilitate discussion concerning the emerging interpretations of the data.

4. Findings

After reviewing the participant data content, high-level reflexive codes were established. These initial codes were then revised further to create five core themes, seen in Table 1:

Following further review, it was apparent that some overlap and minimal coding occurred. The ‘Learning Environment’ theme was initially created to accommodate sub-themes and associations of ‘Technical Equipment,’ ‘Room Size,’ and ‘Access to Room.’ However, the number of codes across these was low (n = 10). When reviewing the references of these themes, many were attributed to the

'Support and Guidance' of the software, therefore indicating duplication within 'Academic Acceptance.' Also, some references considered the room, but lent itself more to the sub-theme of 'Engagement and Motivation' in the context of students engaging well and interacting. The references within 'Time to Create' also discussed, in detail, the time spent preparing games, so it was reviewed and amended to be reflected in 'Preparation and Review.'

After reviewing minimal coded themes and sub-themes, the core theme of 'Learning Environment' was removed. A final exercise of the participant data with the revised four themes resulted in the following numbers (coding counts are presented for transparency and to indicate distribution of data across themes, not as measures of importance or effect), seen in Table 2:

4.1. Definition of Gamification

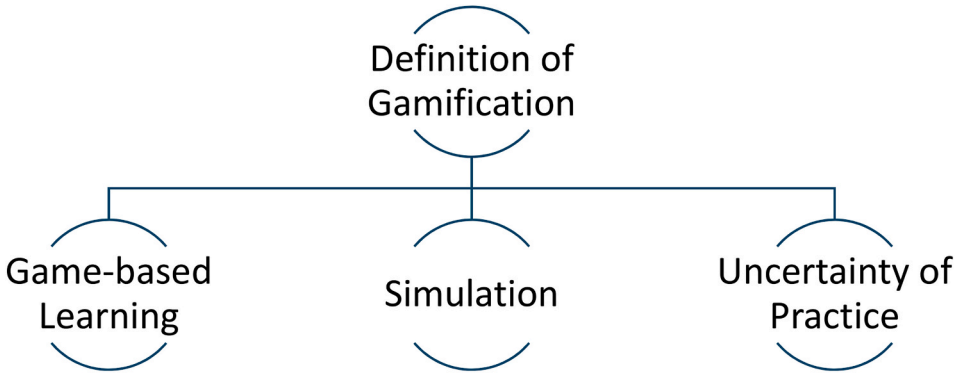

Diagram 1. 'Definition of Gamification' and its sub-themes.

'Definition of Gamification' was used to code content that would raise uncertainty about what gamification is, or more specifically, if the participants questioned if what they were doing was indeed gamification. In addition, content that covered elements of using games adapted for educational purposes or through simulated experiences was also coded within this or the nearest sub-theme on offer.

Within this theme, it was evident that staff were unclear if their methods constituted gamification. Participant B noted their use of *"games or activities"* and *"I'm not sure if you could call it gamification per se"* and questioned, *"I think I am tipping into gamification?"*

There was an appreciation that methods that require interaction or deviation from traditional teaching have a place, but they are apprehensive about calling it gamification. This could be because they do not clearly understand what criteria allow it to be deemed gamification, i.e., badges, leaderboards, and points. However, Participant H was happy to conclude that there are *"different methods we need to use that aren't necessarily what we would call traditional."*

In addition, there was an acknowledgement that the term 'gamification' can be seen as a barrier, particularly when categorising the experience. Participant H suggested they *"think the name gamification might be a barrier in itself."* Participant J agreed by highlighting that they *"think the game title is the barrier because if it goes well, you can't be learning or if it is a game, it is fun, and therefore it's not serious."* This could be that the perceived term of gamification is too narrow or that there is apprehension that labelling an experience as 'gamification' is devaluing, as it is not serious and, therefore, not seen as effective.

4.2. Academic acceptance

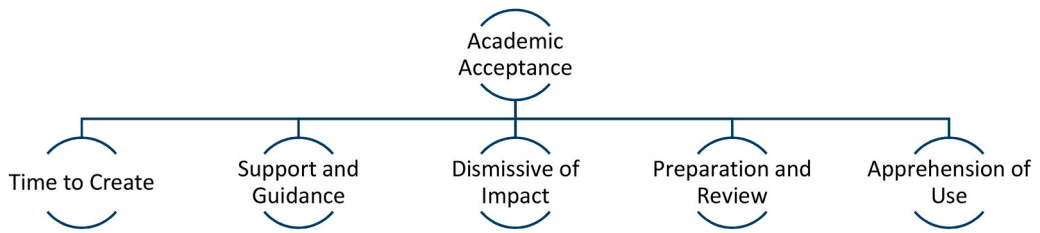

Diagram 2. Definition of 'Academic Acceptance' and its sub-themes.

'Academic Acceptance' was used as a code for content that discussed whether participants discussed the effort they had undergone to develop or review gamification in their classes. It was also used when participants discussed why some staff might dismiss gamification as a concept or why some may avoid using it.

There appear to be several reasons why academic staff lack acceptance of using gamification in the classroom. Some staff thought using games devalued academic studies, despite users of gamification stating otherwise. Participant H suggested that using games in learning is seen to be *"the dumbing down of academia, and it's not."* The same participant further claimed, *"I think it's the knowledge, the confidence of staff and the fear of delegitimising, maybe academia, serious academia, which it's not."*

However, the pressures of developing modules and administration in their day-to-day role appear challenging enough without introducing gamification. The time to prepare both the game and the logistical planning of the session was a barrier to obtaining academic buy-in. Participant B complimented this statement by claiming they *"think it takes so much time to develop and assess these things. Then, upon all the other stuff that we need to do, I think it can be apprehensive to people who want to try it but don't want to give the time to do it, but when the fact that by doing it, you might create a better learning experience*".

Support and guidance, particularly with digitised software, show a contentious issue. Whilst some participants become more comfortable with simulation facilitation as they use it more, it does not appear to be enough of a sell for academics to experience gamification. Participant G commented that *"the engagement with the supplier was quite critical for clarifying things. But now, because I am leading the module for the second time, I am familiar with everything. I believe that I can manage everything independently."* However, some felt it is not their role to be technologically supportive and would much rather see the system designed intuitively enough for students to guide themselves to the support they seek. Participant I stated a better interface would help staff new to simulation facilitation; "*I think that it should be the software that we use; it should be a little bit more user-friendly. I am there; if they need anything, I can help them. However, if there were a tutor with less experience, it would not be easy for them to guide the students. And trust me, they do not get it in the trial round."*

4.3. Experiential learning

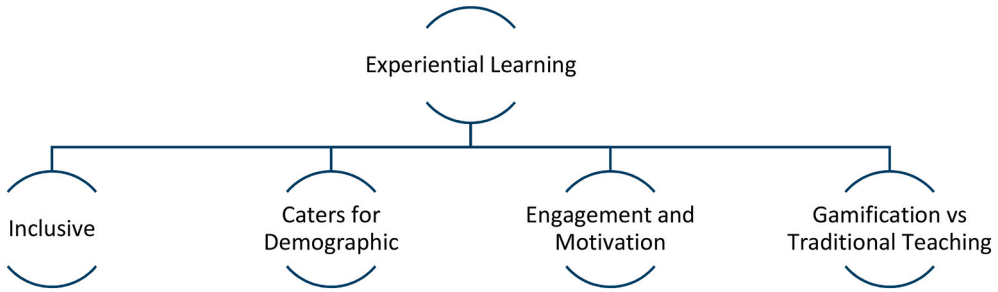

Diagram 3. Definition of 'Experiential Learning' and its sub-themes.

'Experiential Learning' was used to code content that considered the demographic of the students and highlighted the differing learning styles and ways in which information is digested from students compared to the generations before them. This code was also used when participants noted a comparison between gamification and what would be considered traditional teaching methods.

This theme summarises that participants primarily opted for using gamification to engage and motivate students' learning in content that would otherwise be deemed traditional, i.e., case studies. Participant K found that gamification had helped them improve engagement mid-semester; *"I delivered the module, and I used case studies only, and I could see that engagement was dropping after a while, and then attendance also dropped. I decided I had to do something to make things more interesting."*

Many participants agreed that gamification does an excellent job of catering to a cohort that are digitally proficient, and the way knowledge is digested has changed. Participant D claimed that *"students' learning styles have changed dramatically, so my experience since I started teaching in 2014 is that students are getting a little bit more tech-savvy as we move through here"*.

Participant H noted gamifications' inclusive benefits by identifying that feedback from students on using gamification was seen positively, particularly amongst neurodiverse students; *"for much feedback across all my levels and all my modules where I've used it specifically from the students who have neurodiverse challenges. It is because they're learning a different way, and the feedback I've got is they need to see things to understand it, to apply it, it's more kinaesthetic."*

Participants universally agreed that gamification has a place in education. Still, it is not a mechanism that would be seen to replace traditional methods of learning, not least soon. Participant I surmised that *"if gamification becomes so advanced that you're able to learn about theories and then realising that these are the theories you've learnt about and what they mean, that's fine, but I don't think gamification is at the point that you know it can substitute the traditional lecture"*.

4.4. Real experience

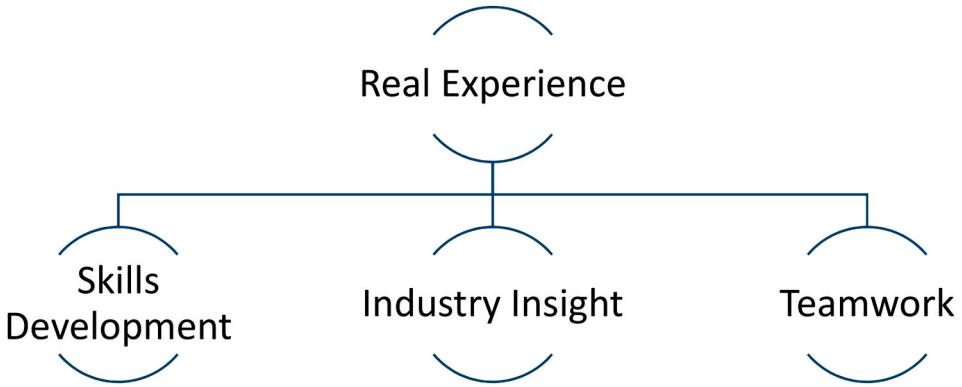

Diagram 4. Definition of 'Real Experience' and its sub-themes.

'Real Experience' was used as a code when participants discussed gamification as a method that provided insight into the industry or acknowledged the skills or group dynamics needed for workplace preparedness. It also considers if the participant discussed using gamification or simulations to mitigate the demand for exposure to industry or replace what would otherwise be field trips.

It was apparent that there was a heavy focus on using simulations over a game-based exercise to provide students with industry exposure. Participant K, who had prior experience in the industry before their career in academia, was complimentary about the value the experience can bring. They said, *"Having come from a background in business as well, I like the idea of applying to learn, like in Strategic Management, which has a lot of concepts, models and theories that aren't always that structured, being brought into a simulation."*

The reliance on gamification could be due to the lack of access to various industry visits following COVID-19. Participant I acknowledged that students were *"missing the real thing, the real world, the real experience",* but struggled to find an appropriate visit that was used in the past and that had since ceased tours following COVID-19.

Likewise, there was an appreciation that students were used to screens, and whilst simulation use can continue, there was a need to consider alternative methods for authentic experience. Simulations had been used to develop skills such as decision-making, teamwork and reflection in a safe environment. Some participants noted a focus on teamwork as it was lacking in their module. They attributed COVID-19 as one of the reasons for this, with Participant D commenting that *"coming out of lockdown, it was hard to persuade some students to be part of a group"*. To mitigate this, some participants stated that the group work for the simulation fostered a fun and engaged environment in the classroom. Participant E observed that *"the good thing is that the communication is happening in all directions, so students are talking to each other, contributing to a more open learning environment."* Participant K supported this view, noting that the classroom was mostly a *"very positive feeling and environment because the competition became fun with friendly banter."*

5. Discussion

The findings provided insight into the academic staff's role in the classroom and highlighted several factors that may impact the perception of an academic using gamification.

When considering the requirement for technological confidence, Participant D highlighted that *"students' learning styles have changed dramatically, so my experience since I started teaching in 2014, students are getting a little bit more tech-savvy"*. In addition, this research also determined that staff teach a more diverse and inclusive cohort than previously accustomed to. HESA's (2023) data reflect the findings, for example, showing a 76% increase in students not labelling themselves as male or female when asked about their sex. Additionally, the survey states a 31% increase in students having a known disability and an 18% average increase in students across all categorised age groups compared with 2010 to 2022 data. This provides a reason as to why staff may consider gamification as a teaching method.

The findings confirmed that staff used gamification in their classroom to engage and motivate students. The staff were conscious of the digital native and inclusive demographic and that there is increased pressure on HE to be innovative in their pedagogy for student engagement and motivation (Castillo-Parra et al., 2022). The interviews also highlighted some caution with using digitised gamification in the classroom, particularly around the time it takes for students to understand the system. Participant I commented that they *"do not have the luxury of practising the game for a few weeks. We used to spend six weeks playing it, whereas now we have four weeks,"* agreeing with studies on barriers to gamification (Sobocinski, 2017).

Despite the apprehension of using technology, the findings found that most academic staff recognise a need to move away from traditional didactic teaching to make it more engaging. Participant B stated they *"truly believe that learning should be a fun process, and you should have fun whilst you are learning. Otherwise, it is pointless."* It is argued that conventional teaching approaches may not always be the best way to prepare students for life after graduation and entry into the workforce (Melzer, 2014). This is corroborated by the findings of the staff interviews, with Participant G highlighting that *"the game was to get students to experience what it is like to make decisions in marketing."* The staff interviewed supports the idea that academic staff are increasingly assertive and that assignments that push students to think differently and concentrate on work-related skills, like communication, are better for them (Raja, 2018). It is not only academic staff who see traditional teaching as outdated. Students acknowledge that the didactic teaching model is insufficient, and their learning is constrained (Caliatto & da Silva Almeida, 2020). This study found that academics agree with the need to think

innovatively regarding their pedagogy.

With gamification being a positive mechanism in pedagogy to engage and motivate students (Kwon & Özpolat, 2021), it is the role of the academic to decide if this is the appropriate method to teach. As discussed previously, there is wide acknowledgement from both academics and students that traditional methods of teaching are not suitable, especially when preparing for the world of work (Caliatto & da Silva Almeida, 2020). However, there is apprehension about using gamification in the classroom among staff. This study sought to explain if this lack of buy-in was because they were dismissive of its impact. Participant H argued that some academics perceive gamification as *"the dumbing down of academia, when it's not."* This view is corroborated by studies that dismiss the impact of gamification as a pedagogic tool (Kiili, 2008). On the other hand, it is argued that the increasing trend of gamification utilisation relies on technology (Deterding et al., 2011). Consequently, a demographic deemed 'digitally native' (Prensky, 2001) is causing apprehension, given the non-digital tutor teaching digital natives (Cornu, 2011). Therefore, there can be a degree of nervousness when using technology-enabled gamification (Kirschner & De Bruyckere, 2017).

To mitigate apprehension, academic staff can use non-digital gamification. Participant F had used non-digital gamification in the past, reflecting that *"I created all the games myself. I did not find anything readily available. I have designed everything bespoke to each module. I got resources for the Lego figurines or the puzzles to* support *it."* This finding is supported by studies that conclude there is a proven history that non-digital gamification is effective in pedagogy (Eck, 2006). Therefore, non-digital gamification as an option may be seen as a comfort or an easier way to integrate into experiential learning in the classroom for staff who do not have the technology skills (Connolly et al., 2006). Participant F's observation further highlighted that while technology-focused gamified experiences are beneficial, non-digitised gamification can also motivate (Sailer et al., 2017).

This investigation found that many academic staff participants knew that they were doing something different to the didactic learning experience in the classroom, albeit unsure if what they did was classed as gamification. The findings concluded that staff found it hard to define a label for doing something different in the classroom, other than compartmentalising it as gamification. This is consistent with studies that argue gamification has its terminology variances, sometimes referred to as *"game-based learning, serious games and learning by design"* (Hung, 2017, p. 57). In response, this research opted to use a flexible approach in defining gamification to incorporate other terms such as game-based learning, serious games, and simulations.

The findings showed that academic staff appreciated the need to develop student skills and work preparedness. The staff participants used experiential learning to focus on decision-making, teamwork, communication, and reflection for skill development. This is consistent with the skills that the World Economic Forum (WEF, 2023) outlines are required in the future, and, therefore, the findings argue that gamification is a mechanism that can help develop these skills.

The staff participants were mostly gamification advocates, and it was evident that their facilitation experience had developed their knowledge of the systems used over the years. The academic role is critical in developing the gamified experience, due to the planning required for the preparation needed to facilitate gamification (Hidalgo et al., 2018). It is argued that an academic seeking to provide experiential learning in the classroom must have the technical knowledge and the pedagogical expertise in their teaching (Mindt & Rieckmann, 2017).

However, the qualitative data also determined that using gamification still takes time for staff to build competence with the gamified platforms, which is one reason some staff are not adopting gamification in their classroom. Participant A reflected this when stating that gamification is *"a bit of a hard sell. People have a preconception of game-based learning being a big effort to set up and plan."* This parallels Mindt and Riekmann's (2017) view of the need for digital and pedagogical expertise when considering experiential learning.

TAM (Davis, 1989) offers a valuable theoretical framework for interpreting how academic staff perceive and engage with such tools. Participants noted that gamification promotes inclusivity in the classroom, aligning with their teaching values and goals of student engagement. This aligns with the TAM construct of Perceived Usefulness, where educators perceive gamification as beneficial to enhancing pedagogical outcomes.

In light contrast, the complexity of setting up gamification tools and the necessity of becoming technical support diminished its perceived ease of use. This negatively affected their intention to adopt gamification more regularly, reinforcing TAM's proposition that ease of use is a critical determinant of technology acceptance. In simple terms, staff were more willing to use gamification when they perceived clear teaching benefits, but less willing when it felt difficult to manage or required them to act as technical support.

6. Conclusion

Given the exploratory nature of this study and the diversity of participant experiences, the conclusions presented here should be understood as contextually grounded rather than generalisable. In addition, given participants used digital gamification with differing levels of digital complexity and pedagogical intent, the experiences reported here may reflect not a single phenomenon, but a range of different gamification practices rather than a single, uniform approach.

The research has established that gamification is a concept that is not yet mastered and is still exploratory amongst academic staff. The 'Definition of Gamification' theme found that staff members, within this sample, were unclear about whether their teaching methods constituted gamification and the term 'gamification' was perceived as a barrier, particularly when categorising the experience. The term gamification was too narrow, with the method devalued and not seen as effective, although this was disputed by some staff. This finding further indicates that the ongoing uncertainty of gamification can impact how students perceive the value of the teaching methods used in the classroom.

The theme of 'Academic Acceptance' highlighted the pressures the academics had in developing and administering modules that were deemed challenging enough without introducing gamification. The time to prepare both the game and the logistical planning of the session was seen as a barrier to obtaining academic buy-in from some participants. Support and guidance, particularly with

digitised software, presented a contentious issue. Whilst some participants became more comfortable with simulation facilitation as they used it more, the findings concluded that it was not enough to convince other academics to experience gamification. This is consistent with studies that highlight academic staff's pressures to achieve engagement and motivation in the classroom. To aid buy-in, this investigation suggests that gamification offers a variety of methods of application and that the practice can be as straightforward or complex as the academic staff wants it to be. Participants' motivations for adopting gamification were not systematically captured. These differing motivations may influence both the depth of implementation and perceptions of value, further constraining the extent to which firm conclusions can be drawn.

The theme of 'Experiential Learning' confirmed that participants opt for using gamification to engage and motivate students' learning of the module in a way that would otherwise be deemed traditional and didactic, i.e. case studies. This study suggests that gamification does an excellent job of achieving this as it caters for the digitally proficient and inclusive demographic this generation's cohort of students represents. However, the gamification debate versus traditional teaching was not resolved among participants in this sample. Many participants agreed that gamification can coexist with conventional teaching methods, but there is a long way to go before the process replaces traditional teaching methods.

Gamified simulations were vital to the theme of 'Real Experience' and a way to provide students with industry exposure. The investigation showed that the reliance on simulations was due to the lack of industry visits that varied following COVID-19. Likewise, the analysis concluded that students are used to screens, and whilst simulation use can continue this, academic staff needed to consider alternative methods for demonstrating real industry experience. This study highlighted that simulations were used to develop decision-making, teamwork, and reflection skills in a safe environment.

Staff agreed that gamification is an excellent way to enhance engagement and motivation for student learning. However, the concern for other staff adopting this poses the challenge of convincing them that the gamification method is worthwhile. This study argues that there are numerous ways to implement gamification in the classroom, and it can be straightforward or as complex as they see fit.

This study contributes to the theoretical development of TAM by applying it to a qualitative, HE context regarding academic experiences in using gamification in the classroom. It highlights how digital gamification has perceived usefulness (notably its inclusive perception) and can coexist with perceived ease-of-use barriers, such as the lack of technical support, leading to hesitation or discontinuation of use. The research extends TAM by demonstrating that in academic environments, value alignment with pedagogical goals may not be sufficient for adoption unless accompanied by strong institutional support whether in time for development or investment in user-friendly platforms.

Future research involving multiple institutions, consistent gamification formats, and a clearer understanding of staff motivations for adoption is needed to validate and extend these preliminary insights.

6.1. Limitations of the research

This study was limited to the perceptions of only staff and at one institution. There is an opportunity to obtain the views of students and their experiences and staff at other institutions who have used gamification. Students could be invited to participate in a focus group to share their views on their gamified experience, allowing for the probing of statements. Taking the view of Morgan (1996), the use of a focus group will enable participants to share ideas and clarify views. This is despite some views that focus groups often aim to improve morale or provide an impression that there is inclusion in direction (Krueger, 1994, pp. 36–45), although notably in the context of business organisations rather than in education. Alternatively, the study could be performed with post-graduate students who were participants of gamification to determine if their views are similar despite being older compared to an undergraduate student.

Additionally, this study was limited to staff who instructed students at the undergraduate level in the subject of business and management education. There could be an opportunity to determine if the views gathered in this research have generalisability in another subject area. Further research could extend this investigation to staff teaching in different subject areas at the undergraduate level to determine whether similar perspectives emerge. Furthermore, conducting a larger-scale survey with clearly defined parameters and a broader sample would enhance the generalisability and robustness of the findings.

6.2. Implications of the research

This study highlights the importance of institutional support in enabling the successful adoption of gamification in the classroom. While academic staff widely acknowledge the inclusive and pedagogical value of gamified approaches, the findings noted that the adoption is hindered by the technical complexity and the perceived burden of acting as technical support. HEIs aiming to foster innovation in teaching practices must consider tools that are user-friendly but consider engaging with peer-led communities of practice. By addressing barriers related to the perceived ease of use and providing adequate support, universities can improve gamification acceptance and, consequently, create more equitable learning environments.

CRediT authorship contribution statement

Michael Drummond: Writing – original draft. **Sue Cronshaw:** Writing – review & editing. **Madeline Pickles:** Writing – review & editing.

Ethics statement

This study received ethical approval from the researchers place of work. The committee concluded that there was no risk of harm or hazards for participants for this study and was awarded ethical approval and a reference number was presented.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijme.2026.101439.

Data availability

Data will be made available on request.

References

Alabbasi, D. (2018). Exploring teachers' perspectives towards using gamification techniques in online learning. *Turkish Online Journal of Educational Technology-TOJET, 17*(2), 34–45. https://doi.org/10.17718/tojde.328951

Ameen, F. (2026). Individual and group competitive digital gamification in ESL adult classrooms: A systematic review of effects on vocabulary retention, motivation, and engagement. *Smart Learning Environments, 13*(1). https://doi.org/10.1186/s40561-026-00447-z

Bocock, L., Scott, M., & Hillary, J. (2025). Skills imperative 2035 final report. *National Foundation for Educational Research*. Available at: https://www.nfer.ac.uk/publications/skills-imperative-2035-final-report/. (Accessed 2 March 2026).

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. Sage publishing. https://doi.org/10.53841/bpsqmip.2022.1.33.46

Burgess, A., Senior, C., & Moores, E. (2018). A 10-year case study on the changing determinants of university student satisfaction in the UK. *PLoS One, 13*(2), Article e0192976. https://doi.org/10.1371/journal.pone.0192976

Caliatto, S. G., & da Silva Almeida, L. (2020). *Learning and academic performance in higher education* (pp. 1855–1876). Ibero-American Journal of Studies in Education. https://doi.org/10.21723/riaee.v15i4.12670

Castillo-Parra, B., Hidalgo-Cajo, B., Vásconez-Barrera, M., & Oleas-Lopez, J. (2022). Gamification in higher education: A review of the literature. *World Journal on Educational Technology, 14*(3), 797–816. https://doi.org/10.18844/wjet.v14i3.7341

Chernikova, O., Heitzmann, N., Stadler, M., Holzberger, D., Seidel, T., & Fischer, F. (2020). Simulation-based learning in higher education: A meta-analysis. *Review of Educational Research, 90*(4), 499–541. https://doi.org/10.3102/0034654320933544

Connolly, T. M., Stansfield, M., & McLellan, E. (2006). Using an online games-based learning approach to teach database design concepts. *Electronic Journal of e-Learning, 4*(1), 104–111. https://doi.org/10.4018/9781609601959.ch706

Cornu, B. (2011). Digital natives: How do they learn? How to teach them (online), available at: https://policycommons.net/artifacts/8226848/digital-natives/9142352/. (Accessed 17 February 2025).

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper and Row. https://doi.org/10.2307/1511458

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

Deci, E., & Ryan, R. (2000). *Intrinsic motivation and self-determination in human behaviour*. Plenum Press. https://doi.org/10.1037/0003-066X.55.1.68

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining "gamification". In *Proceedings of the 15th international academic MindTrek conference* (pp. 9–15). https://doi.org/10.1145/2181037.2181040

Duong, H. L., & Vo, T. K. (2024). Understanding educators' hesitation to adopt tailored digital gamification. *Psychological Science and Education, 29*(6), 67–80. https://doi.org/10.17759/pse.2024290605

Eck, R. (2006). Digital game-based learning: It's not just the digital natives who are restless. *Educause Review, 41*(2), 16. ISSN: 1527-6619.

Espinosa, R. S. C. (2016). Digital games and gamification applied to education. *Revista Iberoamericana de Educación a Distancia, 19*(192), 27–33. https://doi.org/10.5044/ried.10.2.16142

Febriana, D., & Suparman, A. (2020). Contributing factors to EFL student disengagement. *English Education and Applied Linguistics Journal, 3*(3), 198–204. https://doi.org/10.31980/eealjournal.v3i3.1850

Fielding, A., Dunleavy, P. J., & Langan, A. M. (2010). Interpreting context to the UK's National Student (Satisfaction) Survey data for science subjects. *Journal of Further and Higher Education, 34*(3), 347–368. https://doi.org/10.1080/0309877X.2010.484054

Gerrish, K., & Lacey, A. (2010). *The research process in nursing*. John Wiley and Sons. ISBN: 1405190485, 9781405190480.

Gray, D. E. (2014). *Doing research in the real world*. London: Sage. ISBN: 0761948791, 9780761948797.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59–82. https://doi.org/10.1177/1525822X05279903

Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? A literature review of empirical studies on gamification. In *Proceedings of the 47th Hawaii international conference on system sciences* (pp. 3025–3034). IEEE. https://doi.org/10.1109/HICSS.2014.377.

HESA. (2023). Higher education student statistics: UK, 2021/22 - Student numbers and characteristics. (online), available at https://www.hesa.ac.uk/news/19-01-2023/sb265-higher-education-student-statistics/numbers. (Accessed 8 April 2025).

Hidalgo, C. A., et al. (2018). The principle of relatedness. In A. Morales, et al. (Eds.), *Unifying themes in complex systems IX*. Springer. https://doi.org/10.1007/978-3-319-96661-8_46.

Hung, A. C. Y. (2017). A critique and defence of gamification. *The Journal of Interactive Online Learning, 15*(1), 57–72. ISSN: 1541-4914.

Huotari, K., & Hamari, J. (2012). Defining gamification: A service marketing perspective. In *In proceedings of the 16th international academic MindTrek conference* (pp. 17–22). https://doi.org/10.1145/2393132.2393137

Hyrynsalmi, S., Kimppa, K. K., & Smed, J. (2017). *Gamification ethics, encyclopaedia of computer graphics and games*. Springer International Publishing. https://doi.org/10.1007/978-3-319-08234-9_138-1

Janschitz, G., & Penker, M. (2022). How digital are 'digital natives' actually? Developing an instrument to measure the degree of digitalisation of university students – The DDS-index. *Bulletin of Sociological Methodology/Bulletin de Méthodologie Sociologique, 153*(1), 127–159. https://doi.org/10.1177/07591063211061760

Kiili, K. (2008). Reflection walkthrough method: Designing knowledge construction in learning games. In *2nd European Conference on Games Based Learning*, 978906638191. Barcelona, Spain.

Kirschner, P. A. (2015). Do we need teachers as designers of technology enhanced learning? *Instructional Science, 43*, 309–322. https://doi.org/10.1007/s11251-015-9346-9

Kirschner, P. A., & De Bruyckere, P. (2017). The myths of the digital native and the multitasker. *Teaching and Teacher Education, 67*, 135–142. https://doi.org/10.1016/j.tate.2017.06.001

Krueger, R. (1994). *Focus groups, A practical guide for applied research*. Thousand Oaks: Sage Publications. ISBN: 0761920714, 9780761920717.

Kwon, H. Y., & Özpolat, K. (2021). The dark side of narrow gamification: Negative impact of assessment gamification on student perceptions and content knowledge. *INFORMS Transactions on Education, 21*(2), 67–81. https://doi.org/10.1287/ited.2019.0227

Larsen, M. S., Kornbeck, K. P., Kristensen, R. M., Larsen, M. R., & Sommersel, H. B. (2012). Dropout Phenomena at Universities: What is Dropout? Why does. *Education, 45*, 1111–1120. https://doi.org/10.1556/063.9.2019.1.18

Major, C. H., & Savin-Baden, M. (2012). *An introduction to qualitative research synthesis: Managing the information explosion in social science research*. Routledge. ISBN: 1136616128, 9781136616129.

Melzer, D. (2014). *Assignments across the curriculum: A national study of college writing*. University Press of Colorado. https://doi.org/10.7330/9780874219401

Mindt, L., & Rieckmann, M. (2017). Developing competencies for sustainability-driven entrepreneurship in higher education: A literature review of teaching and learning methods. *Teoría de la Educación. Revista Interuniversitaria, 29*(1), 129. https://doi.org/10.14201/teoredu291129159

Morgan, D. L. (1996). Focus groups. *Annual Review of Sociology, 22*(1), 129–152. https://doi.org/10.1146/annurev.soc.22.1.129

Nakamura, J., & Csikszentmihalyi, M. (2001). Catalytic creativity: The case of linus pauling. *American Psychologist, 56*(4), 337. https://psycnet.apa.org/doi/10.1037/0003-066X.56.4.337.

Ortlipp, M. (2008). Keeping and using reflective journals in the qualitative research process. *Qualitative Report, 13*(4), 695–705. https://doi.org/10.46743/2160-3715/2008.1579

Osorio, I. M. V. (2016). La gamificación en el aprendizaje de los estudiantes universitarios. *Rastros Rostros, 18*(33), 27–38. https://doi.org/10.16925/ra.v18i33.1683

Peng, W., Lin, J. H., Pfeiffer, K. A., & Winn, B. (2012). Need satisfaction supportive game features as motivational determinants: An experimental study of a SDT guided exergame. *Media Psychology, 15*(2), 175–196. https://doi.org/10.1080/15213269.2012.673850

Prensky, M. (2001). Digital natives, digital immigrants part 2: Do they think differently? *On the horizon NCB University Press, 9*(5), 1–6. https://doi.org/10.1108/10748120110424843

Qiao, L., Wang, Y., Zhao, J., et al. (2025). Gamification in higher education administration: A conceptual model for enhancing faculty and staff engagement. *Scientific Reports, 15*, Article 31779. https://doi.org/10.1038/s41598-025-13661-5

Raja, F. U. (2018). Comparing traditional teaching method and experiential teaching method using experimental research. *Journal of Education and Educational Development, 5*(2), 276–288. https://doi.org/10.22555/joeed.v5i2.1816

Robertson, M. (2010). Can't play, won't play (online), available at: http://www.hideandseek.net/2010/10/06/cant-play-wont-play/. (Accessed 4 October 2024).

Rodrigues, L., Toda, A., Pereira, F., Palomino, P. T., Klock, A. C. T., Pessoa, M., Oliveira, D., Gasparini, I., Teixeira, E. H., Cristea, A. I., & Isotani, S. (2022). GARFIELD: A recommender system to personalize gamified learning. *International conference on artificial intelligence in education* https://doi.org/10.1007/978-3-031-11644-5_65

Romero, M., Guitert, M., Sangrà, A., & Bullen, M. (2013). Do UOC students fit in the net generation profile? An approach to their habits in ICT use. *International Review of Research in Open and Distance Learning, 14*(3), 158–181. https://doi.org/10.19173/irrodl.v14i3.1422

Rowan, A., & Neves, J. N. (2021). *UK engagement survey*. Advance HE (Online), available at: https://www.advance-he.ac.uk/knowledge-hub/uk-engagement-survey-ukes-2021. (Accessed 1 March 2025).

Ryan, R. M., Rigby, C. S., & Przybylski, A. (2006). The motivational pull of video games: A SDT approach. *Motivation and Emotion, 30*, 344–360. https://doi.org/10.1007/s11031-006-9051-8

Sailer, M., Hense, J. U., Mayr, S. K., & Mandl, H. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behaviour, 69*, 371–380. https://doi.org/10.1016/j.chb.2016.12.033

Sainath, K., & Sai, K. (2023). Supply chains are playing games: A review literature on gamification in supply chain. *Journal of Future Sustainability, 3*(1), 59–66. https://doi.org/10.5267/j.jfs.2022.11.005

Smithson, J. (2000). Using and analysing focus groups: Limitations and possibilities. *International Journal of Social Research Methodology, 3*(2), 103–119. https://doi.org/10.1080/136455700405172

Sobocinski, M. (2017). I gamified my courses and I hate that world. *Journal of Science, Technology and Sustainable Development, 14*(2–3), 135–142. https://doi.org/10.1108/wjstsd-06-2016-0046

Stewart, D. W., & Shamdasani, P. N. (2015). *Focus groups: Theory and practice*. Sage publications. ISBN: 9781483323961, 148332396X.

Šumak, B., Heričko, M., & Pušnik, M. (2011). A meta-analysis of e-learning technology acceptance: The role of user types and e-learning technology types. *Computers in Human Behaviour, 27*(6), 2067–2077. https://doi.org/10.1016/j.chb.2011.08.005

Teo, T. (2011). Factors influencing teachers' intention to use technology: Model development and test. *Computers & Education, 57*(4), 2432–2440. https://doi.org/10.1016/j.compedu.2011.06.008

Terry, G., Hayfield, N., Clarke, V., & Braun, V. (2017). *Thematic analysis*, the SAGE handbook of. *Qualitative Research in Psychology, 2*, 17–37. https://doi.org/10.4135/9781526405555.n2

Thiebes, S., Lins, S., & Basten, D. (2014). Gamifying information Systems-a synthesis of gamification mechanics and dynamics. *ECIS*. ISBN: 9780991556700.

Vogler-Ludwig, K., Düll, N., & Kriechel, B. (2016). *Arbeitsmarkt 2030-Wirtschaft und Arbeitsmarkt im digitalen Zeitalter: Prognose 2016, W. Bertelsmann Verlag*. https://doi.org/10.3278/6004556w

Whitton, N., & Whitton, P. (2011). The impact of visual design quality on game-based learning. Playful teaching. *Learning Games: New Tool for Digital Classrooms*, 1–19. https://doi.org/10.1007/978-94-6091-460-7_1

World Economic Forum. (2023). *Future of jobs report 2023* (online), available at: https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf, 09/04/2025.