Learning through playing: appreciating the role of gamification in business management education during and after the COVID-19 pandemic

Konstantina Skritsovali

School of Business and Management, Liverpool John Moores University,
Liverpool, UK

Abstract

Purpose – Through active learning and experiential learning theoretical perspectives, this paper explores the role of gamification on the student experience and student learning of undergraduate business management students in the UK.

Design/methodology/approach – To capture the impact of gamification on student experience and student learning during and after the Covid-19 pandemic, data were collected through online surveys with L6 undergraduate students studying during the academic years 2020–2021, 2021–2022 and 2022–2023.

Findings – The analysis of the data revealed three core themes: a) gaining practical experience through gamification b) opportunities for peer engagement and active participation and c) development of soft skills and hard skills.

Practical implications – Based on the lessons learnt, the paper proposes actions and guidelines for integrating gamification into business management curricula that prepare future business managers and leaders to respond to unforeseen challenges and changes.

Originality/value – This study contributes to a series of design suggestions for fellow tutors and practitioners seeking to advance their pedagogical approach to developing agile and resilient future managers and leaders.

Keywords Gamification, Management education, Experiential learning, Active learning, Simulations, Business school

Paper type Research paper

1. Introduction

In the spring of 2020, the Covid-19 pandemic necessitated university closures nationally in the UK and forced an immediate transition to online teaching and learning. Tutors and students were asked to adapt to the 'new normal' and to interact through online platforms. Whilst the world is now well past the lockdown that was imposed because of the spread of the virus, it has become clear that humanity should be able to ensure future resilience. As such, university business schools have a vital role in developing graduates who are work-ready, resilient, and responsible leaders and managers. This is to say that employees are looking for graduates who can demonstrate excellent employability and can succeed in a digital and hybrid world (Cmi, 2021). At the same time, they should be empathetic and responsible leaders who are skilled in responding to unforeseen challenges and changes (Bianchi et al., 2022).

Gamification, i.e. "individual game elements or sets of game elements [that] can be applied to assignments and class structures without having a full game experience" Beatty et al. (2021), has been widely used for almost a decade now (Deterding et al., 2011b). This study investigates gamification as a form of experiential learning (Kolb and Kolb, 2005). Literature suggests that gamification in university curricula can positively affect student engagement

and motivation (Boskic and Hu, 2015; Chang and Wei, 2015) and promote creativity and digital literacy (Koravuna and Surepally, 2020). Yet, the number of studies that empirically investigate gamification during and after remote teaching was imposed due to the restrictions that emerged from the Covid-19 pandemic is still limited. Specifically, there is a lack of studies that aim to unravel the effects of gamification on students whose studies were disrupted by the pandemic. In addition, to the author's knowledge, no studies present a comparative analysis of how student experience and learning have been shaped once teaching was returned in university classrooms. While there are sufficient published studies on gamification in higher education, and it shows promise in enhancing learning outcomes in business management studies, there is a need for further research to understand how to design up-to-date programmes that align university curricula with student expectations and business needs. In addition, there is limited research that comparatively looks at the implication of gamification on student learning and experience during and after the Covid-19 pandemic. The purpose of this paper is to explore and interpret GEN Z student perceptions of the role of gamification in their learning and experience, during and after the Covid-19 pandemic. The paper is structured as follows: the next section presents an overview of the impact of the Covid-19 pandemic on higher education and the role of gamification in university curricula. Section 3 reviews the methodological approach adopted for the empirical part of this study. This is then followed, by the interpretation of the three core themes that were revealed from the thematic analysis. The discussion section reviews the significance of the findings of this study. In doing so, it makes connections with past research and, provides recommendations and practical implications for higher education. Finally, the last section of this paper presents the limitations of this study and provides avenues for future research in the field.

2. Review of the background literature

Since the Covid-19 pandemic, higher education witnessed a rapid demand for innovative pedagogies that foster inclusion and nurture student motivation and engagement within an interactive environment. Whilst games that support learning in the classroom have been around for over a decade, they have recently become increasingly popular due to their fun, relaxed and creative characteristics (Deterding et al., 2011a) that fit the requirements of online or hybrid teaching. As a term, gamification has been adopted in academia to reflect on the opportunities to embed and institutionalise social games that advance learning and enhance the experience, motivation levels and focus in a specific area (Rodrigues et al., 2019). For example, Kapp (2012) defined games as a 'system in which players engage in an abstract challenge, defined by rules, interactivity and feedback, and which results in a quantifiable outcome often eliciting an emotional reaction'. Others considered gamification 'the process of using game thinking and game mechanics to solve problems and engage users' (Zichermann and Cunningham, 2011). For the purpose of this paper, the term gamification will be used to refer to the 'application of game design elements in non-game contexts' (Deterding and Bredow, 2011) (p. 9). This definition has been chosen due to its broad scope that explores gamification from a teleological perspective.

Several drivers have recently pushed towards the rising interest in gamification in teaching and learning in educational and professional contexts. For instance, research suggests that the competitive environment that gamification creates between learners improves motivation and engagement (Caponetto et al., 2014; Plump and Larosa, 2017). Equally, others commended the ability of gamification to provide an enjoyable and captivating experience (Kapp, 2012). This is often supported by opportunities for synchronous and asynchronous engagement with gamification platforms and, at the same time, elements of creativity and innovation in student learning, its flexibility in terms of

accessibility and mechanics, and its potential to accommodate a range of scenarios (Campillo-Ferrer et al., 2020; Kapp, 2012). Additionally, other research indicated that gamification could enhance the development of soft and interdisciplinary skills such as collaboration, communication, flexibility and more (Guardia et al., 2019; Balakrishnan Nair, 2022). It can increase awareness, create a sense of urgency, and nurture digital skills (Buckley and Doyle, 2016; Santos-Villalba et al., 2020; Sigala, 2020). Moreover, gamification has been commented on for the opportunities it offers to learners to gain awareness and appreciates the nature of emergencies such as that of climate change (Santos-Villalba et al., 2020).

In addition, the emergency remote teaching posed in the higher education sector due to the COVID-19 pandemic led tutors to explore novel teaching methods (Lei and So, 2021; Seo and Kim, 2021). One of the challenges tutors had to overcome was associated with students feeling isolated, stressed and often demotivated to study remotely. Students often reported feeling anxious and frustrated about their future professional careers (Aristovnik et al., 2020; Salari et al., 2020). And thus, tutors were faced with difficulties in overcoming socio-emotional barriers from students and at the same, ensuring they develop the skills required to be employable in an uncertain professional future (Martin et al., 2023).

Changes in students' learning styles can also justify academic interest in gamification. Research has shown that the generation in which learners grew up, plays a significant role in their learning styles (Polakova and Klımova, 2019; Shorey et al., 2021). GEN Z, the youngest generation of students currently, are digital natives (Prensky, 2001) who respond better to independent learning, and visual, and kinaesthetic learning (Isaacs et al., 2020). Due to the increased exposure to social media and the Internet throughout their lives, they prefer online communication rather than face-to-face and lack some interpersonal skills (Seemiller and Grace, 2016). Therefore, embedding gamification in the curriculum can align with the tech-savvy interests of young learners and enhance their learning experience.

2.1 The theoretical underpinning

This paper explores gamification through active learning and experiential learning theoretical perspectives. Active learning theory refers to teaching pedagogies that support learners' participation and discourage memorising in static learning systems (Macvaugh and Norton, 2012). Engel (1991) described active learning curricula as cumulative (re-establishing teaching content at increasing depth), integrated (moving beyond disciplinary boundaries), progressive (reflecting on learners and evolving with them as they learn) and consistent (with curricula aims). Active learning emphasised learner agency, i.e. learners are encouraged to explore ideas and develop a deep understanding of a topic, whilst having some kind of authority on learning. This approach to teaching and learning increases motivation and develops critical thinking and reflexive abilities that support life-long learning. Most recently, Mizokami (2018) explored active learning and deep active learning and introduced suggestions on how to advance active learning in the areas of learning hours assessment beyond the class, backward design, curriculum development, multiple classes per week, building an environment for active learning, and the flipped classroom. It is evident that the utilisation of 'learning by doing' or active learning, has become essential in nurturing business leaders who are prepared for the future. This approach is crucial for students pursuing both undergraduate and postgraduate degrees, as it ensures the retention of subject relevance and stimulates student understanding (Loh and Ang, 2020).

Experiential learning (Kolb, 1984) is an approach that can reinforce active learning theory in the classroom and consists of four main phases; concrete experience, reflective observation, abstract conceptualisation and active experimentation. According to Kolb, for a student to have an effective teaching experience, they should be able to balance all four stages. Most recently, studies revisited Kolb's theory to explore what forms a concrete experience

(Morris, 2020), while others aimed at understanding the expected and unexpected experiences, the management of emotions, reflective analysis, abstract conceptualisation, unlearning, and active experimentation of learners that occur during learning (Matsuo and Nagata, 2020). Clark and White (2010) argued that effective business education programs at universities should incorporate experiential learning elements. These components can encompass various forms, including internships in different contexts like simulated, on-campus, and remote opportunities. In this paper, experiential learning will be explored through simulation platforms that encourage learning by doing (Shrivastava, 2010).

3. Research methodology

Personal views and perceptions of students on the impact of gamification on learning and student experience were collected through an online survey. The survey was designed so that the results could provide meaningful answers to support the proposition of actions and guidelines for integrating game-based teaching into business management curricula. The questionnaire consisted of three parts that reflected on the four stages of Kolb's reflective model; concrete experience, reflective observation, abstract conceptualisation and, active experimentation. That allowed participants to express their views and reflections on the role and impact of gamification on student experience and learning. The survey consisted of 10 open-ended questions and, was pre-tested and adjusted based on feedback received from experts in teaching and learning. The final survey was designed to ensure anonymity for participants.

Data collection was conducted for three consecutive years. That was to allow understanding of the role of gamification on student learning and the student experience during lockdown when teaching was moved online as well as after the lockdown and when teaching returned to the classroom. The survey was disseminated via the university platform and was available for two weeks. During this time, students received two reminder emails. Participation was voluntary, and the author never forced students to participate; hence, there was no self-selection bias. Over the 3 years, the survey was disseminated to 889 students; 163 students completed it.

Students who undertook the survey were asked to reflect on their experience engaging with two different gamification platforms. One of them is a business simulation that allows students to work in groups of 6–8 players and run and shoe company. The game last for 7 weeks during which, companies compete against each other over market share and their financial performance. The game is embedded in a core module on Strategic Management. Each round runs over one calendar week and accounts for one financial year. At the end of each round students receive feedback on their company's successes and failures, can compare themselves against others and therefore, aim to improve their performance for the following round. At the end of the 7 weeks winners receive vouchers as a reward for their company's performance. In addition, participation in the business simulation is directly related to the final assessment students should submit for the module.

The second platform is a foresight and scenario role-playing game. Students work in groups of 6–8. Each of the players is randomly allocated a role and they are encouraged to consider the actions that they would take within a 10-, 20- and 30-year horizon. The platform has been designed to enable systemic thinking with a long-term perspective and explore alternative futures on specific issues. The platform has been embedded in an elective module on corporate social responsibility. While participation in the platform is not graded, students are aware that the experience gained whilst playing can support the way they approach the final module assessment.

To have a clear understanding of student responses reflecting on learning and experience whilst attending their studies online or face to face, data received were added into two

separate groups. This is not to say that data was not looked at coherently but instead, that time was spent understanding the circumstances under which students undertook their studies and therefore, appreciating the impact these may have had on how they answered the survey.

A thematic analysis was conducted to identify, analyse and report patterns (themes) within the data (Braun and Clarke, 2006). Thematic analysis is a generic and flexible method for describing and interpreting qualitative data, selecting codes and constructing themes. The method has been used to help the author understand "the ways individuals make meaning of their experience, and, in turn, the ways the broader social context impinges on those meanings" (Braun and Clarke, 2006 p. 81). Therefore, it allowed for a social and contextual interpretation across the data set. Data analysis revealed three core themes that were manifested in the data; a) gaining practical experience through gamification b) opportunities for peer engagement and active participation and c) development of soft and hard skills.

4. Findings

4.1 Gaining practical experience through gamification

The data analysis revealed that experiential learning was core in student responses. To share their experience playing the gamification platforms, participants framed their responses around 'knowledge in a practical way', 'real case scenarios', 'real business leader' and 'real world results'. This theme was particularly prevalent in data collected during the lockdown. In summary, that was a cohort that faced significant disruptions in their university lives whilst studying remotely and therefore being unable to interact with their peers and tutors. At the same time, they were unable to gain any practical experience through internships or placements. A participant who contributed to the data collection during the winter semester 2020–2021, when university studies were fully online, commented:

> The business simulation is really interesting in the way that it immerses us completely, we act like real business leaders in every aspect and area of the company

Students studying online found that gamification was an opportunity for them to act as business leaders who analyse their environment and make decisions for the benefit of the company. Interestingly, the students used the word 'immerse' to refer to the deep learning that engagement with the simulation offers. On a similar note, a student who contributed to the survey during the winter semester 2021–2022 suggested that the experience of playing the game was different to what they gained in other modules:

> I enjoyed the game overall, I think it is something a bit different when compared to other seminars

Therefore, the 'learning by doing' environment that gamification platforms offer to students is what they value the most and stick out in their minds. Interestingly, students also commented on the opportunity to apply theory in practice and experience the impact on business performance:

> The game aids an understanding of the perspective of system thinking from different entities within the macro and microenvironment.

The intellectual intensity that is being nurtured within gamification, the challenges and, at the same time, the opportunities to 'learn, reflect, conceptualise and experiment' have a positive impact on student learning and student experience. Reference to the macro and microenvironment also correlates with opportunities for tutors to use gamification as a toolkit to meet module learning outcomes. While this does not imply that gamification as a standalone can improve academic performance, evidence from the data analysis suggests that it reinforces learning and the development of a professional mindset.

4.2 Opportunities for peer engagement and active participation

The survey encouraged students to reflect on their levels of engagement and motivation whilst they played on the gamification platforms. Interestingly, whilst almost everybody who contributed to the survey throughout the years argued that they found the games challenging or demanding, they praised the entertainment they had whilst interacting with each other. For instance, a student in the academic year 2022–23 commented that 'The simulation was very challenging but enjoyable' whilst others mentioned that it was a demanding and time-consuming exercise.

> The simulation as a whole is an interesting concept and can be fun, but it is quite long.

Considering that playing gamification platforms requires a lot of commitment, reflection and teamwork from students, it is rewarding to see that students feel engaged and motivated throughout the semester. As data reveal, a key incentive for students to be persistent players, is the competitive nature of the platforms and the reward system in place. For example, a student looked back at the ranking systems that allow players to compare their performance against other companies and suggested:

> I particularly enjoyed the simulation because it challenged me to do better every week to increase in the ranking stages.

Therefore, introducing healthy levels of competition with student learning boosted engagement levels. Interestingly, this theme was particularly prevalent in data collected during the Covid-19 pandemic lockdown. Comments such as 'we learn from each other' and also,

> it's this time of the week that I know when l log on I'll spend time with my team working on something interesting and have fun

very vividly showcase that gamification in the curriculum can give space for peer learning, interaction and entertainment.

Using gamification as a learning tool was noted as a way to motivate community engagement. For instance, a student studying face-to-face during the academic year 2021–2022 argued:

> I enjoyed the game overall, I think it is something a bit different when compared to other seminars

Additionally, it is worth considering that online communication is a skill that Gen Z excels in. Therefore, students who referred to gamification platforms as 'engaging', 'fun', and 'helped students learn', referred to opportunities for online interaction with peers/More specifically, for students studying remotely and who according to research showed signs of isolation, loneliness and, demotivation and disengagement, engagement with an entertaining activity with their classmates was particularly rewarding.

4.3 Development of soft skills and hard skills

A theme that emerged from the data analysis was the opportunities for soft skill development whilst engaging with gamification platforms. Time management, teamwork and, critical thinking were the main areas that students commented on. For instance, one of the participants in the academic year 2021–2022 commented:

> I think being able to take part in the game really allowed me to develop critical thinking and comprehensive reasoning based on academic theory and practical relevance.

Students have been working in teams over a period of time and running a company within a competitive environment. To ensure they were aware of the changes in the macro and

microenvironment of their companies, they had to analyse and synthesise data in a meaningful way. What has been particularly challenging for them, was to keep on top of the pace of changes happening within and outside the company and therefore, be able to react with actual decisions. For example, a student who contributed to the survey during the academic year 2022–2023 claimed that:

> The game really tested my ability to quickly interpret information and think on the spot.

Therefore, critical thinking and problem-solving have been imperative for them to ensure successful business performance. Interestingly, the quote above refers to the simulation requiring rapid actions and a 'think on the spot' ability from players. Linked with opportunities for practical experience gained whilst engaged with the platforms (look at theme Gaining practical experience through gamification), teamwork on gamification platforms can help students develop skills such as agility and resilience.

Data collected for the purpose of the research targeted students who had completed at least part of their studies online. Interestingly, no significant differences were identified regarding student perceptions of soft skills development in an online or physical environment.

5. Discussion and conclusions

This study has provided a three-year review of the impact of gamification on student learning and experience; data collection was conducted during the academic years 2020–20221, 2021–2022 and, 2022–2023. One of the significant contributions of this study is the breadth and the focus of the empirical results and the analysis on students whose studies were at some point during their studies there student life was affected by the lockdown measures imposed due to the Covid-19 pandemic. The study also provided a comparative approach to the analysis and interpretation of data. The findings reveal new characteristics and changes in the learning styles of students. In summary, the findings indicate that embedding gamification in teaching can yield favourable results on student engagement and learning. These results offer proof that incorporating gamification into education holds the potential as an effective educational approach.

The findings of the thematic analysis indicated that students valued the practical experience they gained while engaging with the gamification platforms. This theme was particularly prevalent with the student cohort whose studies were completely disrupted by the pandemic lockdown and who, therefore, could not attend employability fairs, internships or extra-curriculum opportunities organised by the university. For them, gamification was the alternative to practically preparing themselves for their professional lives. For undergraduate students who often lack professional experience, gamification allows them to explore the applicability of abstract and theoretical knowledge in business and recreate a 'real' situation (Breuer et al., 2022). A study examining the role of sustainability gamification on student learning indicated that student understanding and expertise in the topic were significantly improved after they participated in a game (Gatti et al., 2019).

On a similar note, the findings of this current study revealed that the surveyed students valued the opportunities to develop soft and hard skills whilst participating in gamification. This aligns with past research on simulation games in business management that underlined learning development on both contextual and practical levels. For example, active involvement with a game can help students develop applied skills such as time management, team building, and negotiation (Doyle and Brown, 2000) and enhance their thinking abilities (Blakely et al., 2010). Studies conducted during and after the pandemic revealed that employers are interested in candidates who can demonstrate digital skills beyond conventional soft skills (Balakrishnan Nair, 2022; Limniou et al., 2021; Sato et al., 2021). For example, virtual collaboration, virtual tools, adaptability, and flexibility.

The findings of this study suggest that students who participated in gamification were able to develop these skills through synchronous and asynchronous participation in gamification. The opportunities for peer engagement and active participation with the gamification platforms also endorsed skill development.

The shift from the conventional format of a tutor delivering a session in front of an audience, which was then replaced by online teaching to respond to the lockdown measures imposed to protect the public from the Covid-19 pandemic and, the gradual transition back into the classroom, seems to have changed how students perceive of teaching and learning. A global survey conducted by THE revealed what many universities in the UK have been experiencing recently, i.e. a significant drop in student in-class attendance and participation that is far lower compared with the pre-pandemic levels (Williams, 2022). Considering GEN Z's preference for using technology to learn, interact with each other, collaborate, and have fun, it may be argued that academia has entered a new era that has been accelerated, rather than introduced because of remote teaching. Based on the results of this research, gamification can boost student engagement and motivation.

Considering the flexibility of gamification platforms to be used synchronously and asynchronously, this study argues that there is an opportunity for tutors to reflect on the young generations' skills and preferences and consider updating their pedagogical approach. In doing so, universities should be ready to provide tutors with the space, time and resources to review and revise, if necessary, their teaching approach. For instance, the findings of this study revealed that students endorsed the development of a community of learners who interacted and learned from each other whilst they played the gamification platform. Given the limited opportunities for peer interaction during the lockdown, this paper argues that innovative pedagogical mechanisms such as gamification can support an environment where students had fun while actively and collectively constructing knowledge.

In doing so, industry collaborations would be paramount. Working closely with digital learning providers with expertise in developing simulations and gamification platforms for higher education institutions would ensure that the tools that are embedded in a university programme are fit for purpose and in line with the learning objectives of a course. In the aftermath of the Covid-19 pandemic, managers must overcome uncertainty within the business world and the economy. A recent study published by the World Economic Forum suggested that a) connecting and managing the full range of skills, b) acting on ESG risks and sustainability and, c) building organisational resilience, are vital in ensuring business resilience (Hess, 2022). In this context, experiential learning through the lens of gamification can expose students to the complexity of the real business world and the uncertainty managers deal with in their careers. This is not to argue that universities have entered an era during which face-to-face teaching is 'dead', nor that gamification in higher education is a panacea and the answer for all university programmes going through a periodic review. Instead, this study suggests that universities should be flexible and open to innovative pedagogical approaches that reflect student expectations and business needs and are ready to challenge their idea of the 'ideal' teaching environment.

6. Limitations and opportunities for future research

This study explored the role of two specific forms of gamification that were embedded in undergraduate courses at a university business school in the northwest of England. It would be interesting if future research would explore how other forms of gamification are embedded in other universities nationwide and therefore, how their students experience gamification in the curriculum.

Data collection was conducted over a period of three academic years. All students who participated in the survey have been impacted by the restrictions imposed by the Covid-19

pandemic. Considering that they all studied online for a significant period during their university lives, it is essential to consider the implications of remote studying on their experience, well-being, and expectations. Therefore, a similar study should be conducted with students whose studies were not affected by the lockdown during the pandemic.

This study focused on collecting and analysing student perceptions; no consideration was given to the tutors' experience embedding gamification in their practice during that period. It would be interesting if further research aimed at understanding how tutors and facilitators experienced the application of gamification in their teaching with cohorts who have not been affected by the lockdown.

In addition, the sample of this study consists of Gen Z students. These are tech-savvy learners who are known for their excellent online-communication skills and have been highly connected to social media throughout their adulthood (Isaacs et al., 2020).

As these students would be the youngest managers in the business world, it would be interesting to trace the transferability of the skills and experience they developed while engaging with gamification in their workplace. Therefore, future research should aim to understand how alumni perceive the impact of gamification in their professional lives after graduation.

Finally, this study reflected on the positive feedback received from students regarding the role of gamification in their experience and learning. Future research should aim to understand the negative implications students report due to gamification being part of their learning and experience.

References

Aristovnik, A., Kerzic, D., Ravselj, D., Tomazevic, N. and Umek, L. (2020), "Impacts of the COVID-19 pandemic on life of higher education students: a global perspective", Sustainability, Vol. 12, p. 8438.

Balakrishnan Nair, B. (2022), "Endorsing gamification pedagogy as a helpful strategy to offset the COVID-19 induced disruptions in tourism education", Journal of Hospitality, Leisure, Sport and Tourism Education, Vol. 30, 100362.

Beatty, J.E., Chen, Y.S. and Klein, B.D. (2021), "Games and gamification in business school courses: experiential education that creates engagement and flow", Decision Sciences Journal of Innovative Education, Vol. 19 No. 3, pp. 170-172.

Bianchi, G., Pisiotis, U. and Cabrera Giraldez, M. (2022), GreenComp the European Sustainability Competence Framework, Publications Office of the European Union, Luxembourg.

Blakely, G., Skirton, H., Cooper, S., Allum, P. and Nelmes, P. (2010), "Use of educational games in the health professions: a mixed-methods study of educators' perspectives in the UK", Nursing and Health Sciences, Vol. 12 No. 1, pp. 27-32.

Boskic, N. and Hu, S. (2015), Gamification in Higher Education: How We Changed Roles, Paper Presented at the European Conference on Games Based Learning, Reading.

Braun, V. and Clarke, V (2006), "Using thematic analysis in psychology", Qualitative Research in Psychology, Vol. 3 No. 2, pp. 77-101.

Breuer, H., Bessant, J., Breuer, H., Dijk, S., Gudiksen, S., Ivanov, K., Lehmann, C., Leue-Bensch, C., Plietzsch, S., Perez Quinones,~ K.Z., Sørensen, L., Thomsen, J. and Weber, L. (2022), Gamification for Innovators and Entrepreneurs : Using Games to Drive Innovation and Facilitate Learning, De Gruyter, Berlin.

Buckley, P. and Doyle, E. (2016), "Gamification and student motivation", Interactive Learning Environments, Vol. 24 No. 6, pp. 1162-1175.

Campillo-Ferrer, J.-M., Miralles-Martınez, P. and Sanchez-Ibanez,~ R. (2020), "Gamification in higher education: impact on student motivation and the acquisition of social and civic key competencies", Sustainability, Vol. 12, p. 4822.

Caponetto, I., Earp, J. and Ott, M. (2014), "Gamification and education: a literature review", Proceedings of the 8th European Conference on Games-Based Learning - ECGBL 2014, Vol. 1, pp. 50-57.

Chang, J.W. and Wei, H.Y. (2015), "Exploring engaging gamification mechanics in massive online open courses", Educational Technology and Society, Vol. 12 No. 2015, pp. 177-203.

Clark, J. and White, G. (2010), "Experiential learning: a definitive edge in the job market", American Journal of Business Education (AJBE), Vol. 3, pp. 115-118.

Cmi (2021), Work Ready Graduates: Building Employability Skills for a Hybrid World, Chartered Management Institute, London.

Deterding, S. and Bredow, H. (2011), "Situated motivational affordances of game elements: a conceptual model".

Deterding, S., Dixon, D., Khaled, R. and Nacke, L. (2011a), "From game design elements to gamefulness: defining 'gamification'", Paper presented at the Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments.

Deterding, S., Khaled, R.L.E.N. and Dixon, D. (2011b), "Gamification: toward a definition", Paper presented at the CHI 2011, Vancouver.

Doyle, D. and Brown, F.W. (2000), "Using a business simulation to teach applied skills – the benefits and the challenges of using student teams from multiple countries", Journal of European Industrial Training, Vol. 24 No. 6, pp. 330-336.

Engel, C. (1991), "Not just a method but a way of learning", in Boud, D. and Felletti, G.P. (Eds), The Challenge of Problem-Based Learning, Routledge, London, pp. 22-33.

Gatti, L., Ulrich, M. and Seele, P. (2019), "Education for sustainable development through business simulation games: an exploratory study of sustainability gamification and its effects on students' learning outcomes", Journal of Cleaner Production, Vol. 207, pp. 667-678.

Guardia, J.J., Del Olmo, J.L. and Berlanga, V. (2019), "Innovation in the teaching-learning process: the case of Kahoot!", On the Horizon, Vol. 27, pp. 35-45.

Hess, C. (2022), Three Imperatives for Businesses to Mitigate Risks and Thrive in an Uncertain World, World Economic Forum, Vol. 2023, available at: https://www.weforum.org/agenda/2022/04/ three-business-imperatives-to-thrive-in-an-uncertain-world/ (accessed 30th June 2023).

Isaacs, A.N., Scott, S.A. and Nisly, S.A. (2020), "Move out of Z way Millennials", Currents in Pharmacy Teaching and Learning, Vol. 12 No. 2, pp. 1387-1389.

Kapp, K. (2012), The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education, Pfeiffer, San Francisco, CA.

Kolb, D. (1984), Experiential Learning: Experience as the Source of Learning and Development, Prentice-Hall, Englewood Cliffs, NJ.

Kolb, A.Y. and Kolb, D.A. (2005), "Learning styles and learning spaces: enhancing experiential learning in higher education", Academy of Management Learning and Education, Vol. 4 No. 2, pp. 193-212.

Koravuna, S. and Surepally, U.K. (2020), "Educational gamification and artificial intelligence for promoting digital literacy", Proceedings of the 2nd International Conference on Intelligent and Innovative Computing Applications: Article 19, Plaine Magnien, Association for Computing Machinery.

Lei, S.I. and So, A.S.I. (2021), "Online teaching and learning experiences during the COVID-19 pandemic – a comparison of teacher and student perceptions", Journal of Hospitality and Tourism Education, Vol. 33 No. 3, pp. 148-162.

Limniou, M., Varga-Atkins, T., Hands, C. and Elshamaa, M. (2021), "Learning, student digital capabilities and academic performance over the COVID-19 pandemic", Education Sciences, Vol. 11, p. 361.

Loh, R. and Ang, C.-S. (2020), "Unravelling cooperative learning in higher education", Research in Social Sciences and Technology, Vol. 5, pp. 22-39.

Macvaugh, J. and Norton, M. (2012), "Introducing sustainability into business education contexts using active learning", International Journal of Sustainability in Higher Education, Vol. 13 No. 1, pp. 72-87.

Martin, A.J., Ginns, P. and Collie, R.J. (2023), "University students in COVID-19 lockdown: the role of adaptability and fluid reasoning in supporting their academic motivation and engagement", Learning and Instruction, Vol. 83, 101712.

Matsuo, M. and Nagata, M. (2020), "A revised model of experiential learning with a debriefing checklist", International Journal of Training and Development, Vol. 24 No. 2, pp. 144-153.

Mizokami, S. (2018), "Deep active learning from the perspective of active learning theory", pp. 79-91.

Morris, T.H. (2020), "Experiential learning – a systematic review and revision of Kolb's model", Interactive Learning Environments, Vol. 28 No. 8, pp. 1064-1077

Plump, C.M. and Larosa, J. (2017), "Using kahoot! In the classroom to create engagement and active learning: a game-based technology solution for eLearning novices", Management Teaching Review, Vol. 2 No. 2, pp. 151-158.

Polakova, P. and Klımova, B. (2019), "Mobile technology and generation Z in the English language classroom—a preliminary study", Education Sciences, Vol. 9 No. 3, p. 203.

Prensky, M. (2001), "Digital natives, digital immigrants Part 1", On the Horizon, Vol. 9 No. 5, pp. 1-6.

Rodrigues, L.F., Oliveira, A. and Rodrigues, H. (2019), "Main gamification concepts: a systematic mapping study", Heliyon, Vol. 5 No. 7, e01993.

Salari, N., Hosseinian-Far, A., Jalali, R., Vaisi-Raygani, A., Rasoulpoor, S., Mohammadi, M., Rasoulpoor, S. and Khaledi-Paveh, B. (2020), "Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and metaanalysis", Globalization and Health, Vol. 16 No. 1, p. 57.

Santos-Villalba, M.J., Leiva Olivencia, J.J., Navas-Parejo, M.R. and Benıtez-Marquez, M.D. (2020), "Higher education students' assessments towards gamification and sustainability: a case study", Sustainability, Vol. 12 No. 20, p. 8513.

Sato, S., Kang, T.-A., Daigo, E., Matsuoka, H. and Harada, M. (2021), "Graduate employability and higher education's contributions to human resource development in sport business before and after COVID-19", Journal of Hospitality, Leisure, Sport and Tourism Education, Vol. 28, 100306.

Seemiller, C. and Grace, M. (2016), Generation Z Goes to College, John Wiley & Sons, San Francisco.

Seo, S. and Kim, H.J. (2021), "How COVID-19 influences hospitality and tourism education: challenges, opportunities, and new directions", Journal of Hospitality and Tourism Education, Vol. 33 No. 3, p. 147.

Shorey, S., Chan, V., Rajendran, P. and Ang, E. (2021), "Learning styles, preferences and needs of generation Z healthcare students: scoping review", Nurse Education in Practice, Vol. 57, 103247.

Shrivastava, P. (2010), "Pedagogy of passion for sustainability", Academy of Management Learning and Education, Vol. 9 No. 3, pp. 443-455.

Sigala, M. (2020), "Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research", Journal of Business Research, Vol. 117, pp. 312-321.

Williams, T. (2022), Class Attendance Plummets Post-covid, Times Higher Education, Vol. 2023, available at: https://www.timeshighereducation.com/news/class-attendance-plummets-post-covid (accessed 30th June 2023).

Zichermann, G. and Cunningham, C. (2011), Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps, O'Reilly Media, Sebastopol.

Corresponding author
Konstantina Skritsovali can be contacted at: k.skritsovali@ljmu.ac.uk