The International Journal of Management Education 25 (2027) 101547

Contents lists available at ScienceDirect

The International Journal of Management Education

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

Business simulation games and ethical decision making confidence and intentions: The role of self-efficacy, reflective practice, and teamwork

Foteini Stavropoulou *, Kostas Zervas, Ioannis Kostopoulos

Liverpool Business School, Liverpool John Moores University, Liverpool, L3 5UG, United Kingdom

ARTICLE INFO

Keywords:
Business education
Experiential learning
Simulation games
Ethical decision making

ABSTRACT

This study examines the potential associations between experiential learning via participating in a business simulation game and business students' ethical decision making confidence and intentions. While simulation games have been widely recognized for their effectiveness in developing business competencies, their associations with ethical decision making confidence and intentions in a non-ethics related environment remain underexplored. Drawing on Kolb's experiential learning theory, we carried out a quantitative survey with the use of a structured questionnaire. We collected data from 251 undergraduate students in a UK university and analyzed them using structural equation modeling. Our findings suggest that participation in simulation games is associated with higher levels of students' teamwork and reflective practice capabilities that, in turn, were found to be positively associated with their ethical decision making confidence and intentions. Moreover, students who participated in simulation games reported higher self-efficacy which, however, was not found to have a significant relationship with ethical decision-making confidence and intentions. Our findings highlight the potential value of integrating experiential learning tools, such as simulation games, into business education suggesting an association with improvements in students' ethical decision making confidence and intentions. Theoretical and practical implications for researchers, universities, and practitioners are discussed.

1. Introduction

"Intelligence plus character—that is the goal of true education." – Martin Luther King Jr.

In his recent article in the Financial Times (2024), economic commentator Martin Sandbu highlights the importance of ethical behavior in the business sector, emphasizing the difficulties executives many times face in balancing between their moral commitments and their business goals. Similar arguments about the importance of ethical decision making have been repeatedly expressed in the business ethics literature (e.g. Loe et al., 2000). Ethical considerations while making decisions ensure that business practitioners are aware of their choices' impact on others, maintaining in that way the integrity and the reputation of the organization they work at (Woiceshyn, 2011). According to Hunt and Vitell (1986), ethical decisions are the ones that are guided by personal moral philosophies, including deontological and teleological perspectives. On this basis, Wu (2002, p. 164) defines ethical decision making as the one that

* Corresponding author.
E-mail addresses: f.stavropoulou@ljmu.ac.uk (F. Stavropoulou), k.zervas@ljmu.ac.uk (K. Zervas), i.kostopoulos@ljmu.ac.uk (I. Kostopoulos).

https://doi.org/10.1016/j.ijme.2026.101547
Received 16 April 2026; Received in revised form 16 September 2026; Accepted 19 September 2026
Available online 22 September 2026
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"demonstrates the moral conundrum involving justice and the rights of decision makers to influence others; it characterizes the consideration of ethics/morality when one makes decisions".

A significant question that has been previously discussed in the pertinent literature is whether business ethics can be taught and especially in the environment of a Business School (Ritter, 2006). In general, ethics education can have different formats; one is as a stand-alone core ethics course; another format is to integrate ethics content into various courses or a combination of both, i.e., offering a dedicated ethics course as well as spread ethics content throughout multiple courses (Martinov-Bennie & Mladenovic, 2015; Ritter, 2006). The past couple of decades, ethics education has also been delivered implicitly, using experiential learning in non-ethics related courses. Experiential learning enhances critical thinking and problem-solving skills that are key to ethics education (Chen et al., 2025; Montiel et al., 2020). By allowing students to interact with ethical situations they would face at work and apply ethical analyses to actual managerial decisions, it adds value to their transformation into ethical business leaders (Laditka & Houck, 2006). Moreover, experiential learning methods are considered very engaging and emotionally involving, parameters crucial in the development of ethical decision makers in a business context. One of the most commonly used experiential learning techniques in Business Schools relates to simulation games (Chen et al., 2026; Jagger et al., 2016; Lin et al., 2024).

There is a plethora of studies examining the role of simulation games in business education and specifically their positive influence on students' skills and competencies development (e.g., Pitic & Irimiaş, 2023; van der Westhuizen & Goyayi, 2020; Yang et al., 2024). While literature has acknowledged the role of experiential and simulation-based learning in ethics education, their potential association within non-ethics related courses has been ignored. To our knowledge, no study explores the exact mechanisms through which experiential learning activities, such as simulation games, affect students' ethical decision making confidence and intentions in a non-ethics related educational environment. Aiming to fill this important gap in the literature, in this study, we examine the potential associations between experiential learning via participating in a business simulation game and the students' ethical decision making confidence and intentions. Thus, our research aim is to explore how student participation in a business simulation game is positively associated with higher levels of students' ethical decision-making confidence and intentions through a) greater levels of self-efficacy, b) the engagement in reflective practice and c) greater levels of teamwork skills.

In the following sections, we first present the theoretical background that led us to formulate our research hypotheses. We then explain the methodology we followed to test our hypotheses' validity and the main findings from the pertinent data analysis. After that, we present our study's main conclusions along with their implications for theory and practice. Finally, we describe our study's limitations and offer useful suggestions for future research.

2. Literature review & hypotheses development

In this section, we will discuss the relevant literature review along with developing our conceptual model and hypotheses. Our study argues that the use of a web-based simulation game (i.e., experiential learning) is associated with higher levels of students' ethical decision making and intentions via creating a sense of self-efficacy in students, engaging students in reflective practice as well as developing students' teamwork skills. Fig. 1 presents our conceptual model.

2.1. Experiential learning - simulation game

Experiential learning focuses on the idea that people best learn by having experiences and knowledge is created by perceiving and processing/transforming experience. Central to the experiential learning theory is Kolb's experiential cycle. This cycle comprises four stages: "concrete experience" refers to having an experience, "reflective observation" is reflecting on the experience, "abstract conceptualization" refers to learning from the experience and "active experimentation" is applying what you have learnt (Kolb & Kolb, 2005). Research demonstrates that teaching is more effective, especially when teaching millennials and Generation Z students, when instead of a traditional lecture, a student-centered environment is fostered, including experiential learning activities, team collaboration, interaction, timely feedback and social networking (Gawel et al., 2025; Magrizos, 2020; Montiel et al., 2020). Towards this direction, many studies have investigated the potential of using digital pedagogical tools, such as apps (Delmas & Kohli, 2020; Montiel et al., 2017) and simulations (Adib, 2024; Buck, 2014; Jagger et al., 2016) to teach ethics, CSR and sustainability.

Experiential learning enhances critical thinking and problem-solving skills that are key to ethics education (Chen et al., 2025; Montiel et al., 2020). Furthermore, experiential learning supports business ethics teaching by helping students assimilate ethical situations that are likely to be encountered in the workplace as well as by applying ethical analysis to real world management decision



Fig. 1. Conceptual model illustrating the proposed relationships between experiential learning and students' ethical decision making confidence and intentions in business education.

making (Laditka & Houck, 2006). McWilliams and Nahavandi (2006) highlight that experiential learning methods are the most engaging and emotionally involving methods for ethics education. A variety of experiential learning techniques have been incorporated into business ethics teaching, such as popular feature films (O'Boyle & Sandonà, 2014), student-developed case studies (Laditka & Houck, 2006), live cases (McWilliams & Nahavandi, 2006), trips/internship programs (Christensen et al., 2007), business forums (Blewitt et al., 2018), behavioral simulation (Thorne LeClair & Ferrell, 2000) and computer simulation games (Jagger et al., 2016).

Simulation games belong to the experiential learning paradigm, positioning the learners at the center of the educational process, with educators having the role of the coach/facilitator and evaluator. A simulation game combines the components of a simulation with gaming features, such as competition (usually via a rewards system), rules, fictional characters or organizations, and predefined objectives (Bitrián et al., 2020; Jagger et al., 2016). In our paper, a web-based simulation game is incorporated into the curriculum as an educational tool to enhance and deliver learning outcomes. Upon completing the simulation game, students are required to undertake a reflective assignment, such as delivering a presentation or submitting a report, reflecting on and analyzing their simulation experience. Based on Kolb's experiential learning theory, our didactic setting can be seen as an implementation of Kolb's learning cycle (see Fig. 2). In our adapted version of the model, students start with the "active experimentation" stage before progressing through the subsequent stages of the cycle.

Based on the above, experiential learning has been at the forefront of business ethics education for a number of years (Christensen et al., 2007; Jaganjac et al., 2024). However, most papers discuss the use of experiential learning techniques to teach business ethics. In our paper, we examine how a business simulation game, i.e., an experiential learning tool, being incorporated in courses/subject areas not relating to business ethics, can be positively associated with students' ethical decision making confidence and intentions.

2.2. Ethical decision making

Contemporary businesses operate in complex environments where decisions impact various stakeholders (including employees, customers, and shareholders), the broader society, and the environment. Ethical decision making ought to ensure that these impacts are considered responsibly and fairly, but corporate scandals, the environmental crisis and wealth inequality often bring this notion to the test (Kolk, 2016; Parker, 2003; Tonge et al., 2003; Veiga, 2004). The primal question that can be raised about the ethical integrity of contemporary businesses, rises from the philosophical conflict of "profit vs ethics" and whether these notions can coexist, or are by nature conflicting (Francis & Armstrong, 2003; Joyner & Payne, 2002). In simplified terms, businesses will engage in ethical processes for two main reasons: to do the "right thing" and/or to convince stakeholders that they do the "right thing" (Joyner & Payne, 2002). But contemporary business environment is more complex than this; even when either is true, companies do not operate in a vacuum: market distortions, policies and politics, and natural disasters can dissuade even the earnest of companies to act ethically.

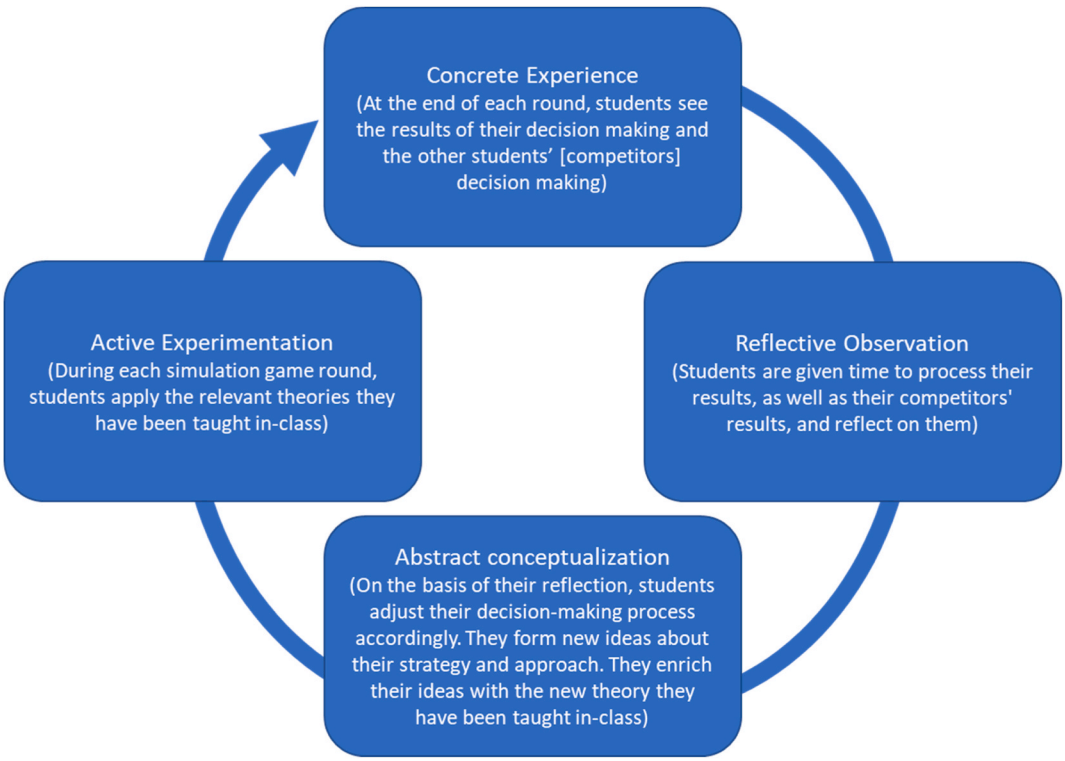

Fig. 2. Adapted Kolb's experiential learning cycle for our didactic setting.

To further shed light to this debate, we should draw on the basic philosophies around business ethics. In a philosophical level, business ethics contributions can be viewed as either "descriptive" or "normative" based on the nature of inquiry, the purpose of study and essentially the definition of business ethics (Moriarty, 2016, pp. 1–57). Descriptive ethics often focus on the behavioral aspects of business discourse and action, avoiding moral judgments (see Bazerman & Tenbrunsel, 2011; De Graaf, 2006). This approach suggests that ethics are shaped by contextual factors, including the wider sociocultural environment as well as the organizational form and culture (Rossouw & Van Vuuren, 2003). Ethical decision making in descriptive ethics examines how people make moral choices, focusing on empirical research from psychology, sociology, and behavioral sciences. Rather than prescribing what people should do, it explores factors like cognitive biases, emotions, social norms, and situational pressures that influence ethical behavior. This approach recognizes that decisions are often intuitive, heuristic-driven, and shaped by real-world constraints, which can lead to ethical fading or rationalization of unethical actions (De Graaf, 2006).

Normative business ethics, on the other hand, emphasize more on what is ethical and what is not, focusing on morality and values that can be adopted in the workplace (see Kagan, 2018). This approach, based on empirical evidence, calls for organizations to address ethical issues with the development and implementation of ethical guidelines through codes of conduct and values statements (Svensson & Wood, 2008; Weaver et al., 1999). Ethical decision making in normative ethics refers to the systematic process of evaluating moral dilemmas based on ethical principles to determine what ought to be done. It relies on moral theories such as utilitarianism (maximizing overall good) (see Gustafson, 2013), deontology (adhering to moral duties and rules) (see Arnold & Bowie, 2003; Bowie, 2017) and virtue ethics (acting in accordance with good character traits) (see MacIntyre, 1984; Moore, 2017). This approach emphasizes rational deliberation, consistency, and moral reasoning to ensure that ethical choices align with universal or context-specific moral standards. Ethical decision making is a multifaceted and intricate process that requires carefully balancing the often-conflicting interests of key stakeholders. Rather than striving for a perfect solution, the focus is on reaching an optimal outcome that considers ethical principles, practical constraints, and the broader implications of the decision.

2.3. Self-efficacy

Studies have shown that business simulations games enable students to develop their confidence and self-efficacy in relation to business, or entrepreneurial decision making (Fitó-Bertran et al., 2014; van der Westhuizen & Goyayi, 2020; Yang et al., 2024). Subsequently, individuals with higher self-efficacy are more likely to engage in ethical behavior, as they feel capable of handling potential repercussions and standing firm against unethical practices (Hannah et al., 2011; Welch, 2013). Moreover, self-efficacy can serve as a crucial mediating factor linking ethical leadership to job satisfaction (Aftab et al., 2023). Employees with high self-efficacy are typically more engaged in their work tasks and experience greater job satisfaction (Xanthopoulou et al., 2007).

From a psychological perspective, self-efficacy correlates positively with moral courage, enabling individuals to act in morally challenging contexts, exhibiting greater tenacity, as they perceive moral challenges as surmountable rather than insurmountable barriers (Hannah et al., 2011; May et al., 2014). This resilience is particularly significant in business environments where unethical behavior may be normalized or incentivized. For instance, employees with high self-efficacy are better equipped to report misconduct or challenge unethical directives, as they perceive themselves as competent to handle conflict and its consequences (Detert & Edmondson, 2011). Additionally, individuals with high self-efficacy tend to be "resilient, confident, and efficacious across tasks and situations" (Loi et al., 2022) and tend to be more certain about the appropriateness of their decisions (Saks & Ashforth, 2000). Building on the aforementioned discussion, it can be concluded that existing literature emphasizes self-efficacy's influence on ethical decision making. This study extends the discourse by investigating how participation in a simulation game within a general business education context (experiential learning) can be associated with higher levels of self-efficacy which, in turn, can be positively associated with ethical decision making confidence and intentions.

Hypothesis 1. a) Participating in a simulation game is positively associated with higher levels of students' self-efficacy.
b) Self-efficacy is positively associated with higher levels of ethical decision making confidence and intentions.

2.4. Reflective practice

Simulation games are considered to be effective educational tools for developing reflective practice (Açıl & Keçeci, 2024; Siewiorek et al., 2012; Silvia, 2012; Vlachopoulos & Makri, 2017). This is primarily because they provide the students with the opportunity to deal with complex and ambiguous problems that lack a single "correct" solution within a realistic context (Silvia, 2012). Solving these ill-defined problems fosters critical thinking, strategic planning, and inquiry skills, encouraging students to research, integrate, and communicate new knowledge within their discipline (Huba & Freed, 2000). This links to Schon's (1983) definition of reflective practice, of *critically examining actions and experiences to improve future practice.*

Reflective practice has become an increasingly popular approach for professionals and especially managers, as a response to a growing "crisis" within professions (Gould, 1996; Schon, 1983). This "crisis" refers to an increased challenge of professional authority and infallibility within workplaces and business settings. Within management, similar critiques took place through critical management studies (CMS) around issues like managerialism, equality and performativity (Alvesson & Spicer, 2012; Spicer & Alvesson, 2024). Decades on, these, predominantly, philosophical debates intersect with the ethical dilemmas of our times (e.g. environmental sustainability, inequality and animal welfare) weighed against the existential (for modern business) need for profit, and the unavoidable human weaknesses (such as greed, corruption, etc.).

Reflective practice can play a pivotal role in enhancing ethical decision making in business as it can reinforce ethical values (Bold &

Chambers, 2009; Brady & Hart, 2007), promote reflective leadership and consequently, improve organizational culture (Castelli, 2016; Rosenberg, 2010), while promoting transformative action towards sustainable development (Colomer et al., 2020; Howell, 2021). As Fook (2015) explains, reflective practice serves as a dynamic process that bridges the divide between theoretical knowledge and real-world application. In other words, it challenges individuals to go beyond personal beliefs, assumptions and pre-perceived notions of the world, and focus on the unpredictable, context-sensitive demands of actual practice. By uncovering these assumptions, reflective practice allows practitioners to identify and address inconsistencies, blind spots, or biases, enabling a deeper alignment between actions and professional goals (Fook, 2015). Furthermore, reflective practice emphasizes on professional artistry - the creative, intuitive, and context-sensitive aspects of practice; encouraging adaptation, fostering innovation, and enhancing emotional intelligence (Botelho, 2021; Fook, 2015).

Within business settings, reflective practice aligns decision making with organizational values and ethical principles, ensuring actions are not only legally compliant but also socially responsible. Additionally, reflective practice enhances awareness of stakeholder impacts, allowing businesses to weigh the broader consequences of their decisions on employees, customers, communities, and the environment. By integrating real-time reflection during decision-making ("reflection-in-action") and post-decision analysis ("reflection-on-action") (Fook, 2015), reflective practice nurtures a continuous improvement cycle, where ethical considerations are actively prioritized and embedded into business strategies. Ultimately, this approach promotes trust, integrity, and long-term sustainability in business operations. While Fook's (2015) [and Shon's (1983)] conceptualization of reflective practice primarily focuses on the critical examination of one's actions, assumptions and professional conduct, it is important to note that this process cannot be fully separated from its affective and interpersonal dimensions, especially within collaborative learning environments. Boud et al. (1985), in their foundational work on reflection in experiential learning, explicitly identify attending to feelings, including the recognition and processing of one's emotional responses within group settings, as an integral stage of the reflective cycle, one that enables rather than replaces critical self-examination.

In other words, the affective dimension of reflection is not peripheral to the Schon/Fook reflective practice tradition but is, in fact, central to it, particularly when learning takes place in a team-based context. Furthermore, Fook (2015) acknowledges that critical reflection involves interrogating not only abstract assumptions and professional behaviours but also the relational dynamics and interpersonal judgements that practitioners bring to their practice. Within a team-based simulation game environment, this relational dimension of reflection becomes particularly important, as students are required to reflect not only on their strategic and business decisions but also on their interactions, communication, and emotional responses to their team members. By attending to these interpersonal and affective dimensions of their shared experience, students engage in what Cunliffe (2004, 2016) explains as relational reflexivity; an awareness of how one's perceptions of and responses to others shape one's own practice and decision making. In this study, therefore, the measurement of reflective practice captures this affective-interpersonal dimension as it manifests within the specific team-based experiential learning context under investigation, in a manner consistent with a holistic reading of the Schon/Fook framework.

In our study, we theorize that participation in a simulation game within a general business education setting (experiential learning) is associated with higher levels of reflective practice, which, in turn, can be positively associated with students' ethical decision-making confidence and intentions.

Hypothesis 2. a) Participating in a simulation game is positively associated with higher levels of students' ability for reflective practice.

b) Reflective practice is positively associated with higher levels of ethical decision making confidence and intentions.

2.5. Teamwork skills development

Teamwork has been recognized as an essential competency for Business Schools graduates. It has become the basic working arrangement of most organizations (White & Lean, 2008); therefore, teamwork skills development is weaved within Business Schools' curricula. There is an inherent connection between teamwork skills development and the use of groupwork within the teaching and learning process. Groupwork can act as an effective mechanism to enhance deep learning, student engagement and motivation, encourage active and experiential learning, and develop transferable skills, such as critical thinking, communication, and decision making (Davies, 2009). Literature supports that groupwork can play an important and pivotal role in developing students' conceptions of ethics (Mladenovic et al., 2019; Petocz & Dixon, 2011). Groupwork can provide an active and experiential learning environment and a forum for student discussions and processing of new ideas (Mladenovic et al., 2019). However, it should not be considered a panacea, as evidence suggests that sometimes group decisions are compromised, a phenomenon known as groupthink, having a negative result in group ethical decision making (O'Leary & Pangemanan, 2007), especially relating to topics with considerable intentional depth (O'Leary & Stewart, 2013). Building on this argument, Mladenovic et al. (2019) highlight that groupwork is more effective when students challenge each other's viewpoints in a constructive manner rather than when they all share similar perspectives. In this way, they can experience how cultural differences within groups affect ethical perspectives and judgement, achieving one of the goals of business ethics teaching.

Montiel et al. (2020) discuss that digital pedagogy might foster learning experiences that bring students together to reach solutions. This is an important feature as the solution of most societal grand challenges included in ethics entails consensus and collaboration from multiple organizations and stakeholders with conflicting interests. Mladenovic et al. (2019) indicate that a well-designed and well-supported groupwork task can facilitate the development of intercultural skills, thus facilitating business ethics teaching. From the above discussion, it is evident that existing literature focuses on teamwork and its direct effect on students' ethical decision making

within the business ethics teaching context. In our paper, we extend this by exploring the effect of teamwork on students' ethical decision making confidence and intentions outside business ethics teaching. To this end, we examine how higher levels of teamwork skill via participating in a web-based simulation game within a general business education setting (irrelevant to business ethics) can be associated with higher levels of ethical decision making confidence and intentions.

Hypothesis 3. a) Participating in a simulation game is positively associated with higher levels of teamwork skill.
b) Teamwork skill is positively associated with higher levels of ethical decision making confidence and intentions.

3. Methodology

3.1. Sampling and data collection

Aiming to test the validity of our conceptual framework, we followed a deductive approach and carried out a quantitative study using a structured questionnaire. We used a non-probability sampling method (convenience), with a sampling frame comprising approximately 1024 students. The case of a large metropolitan post-1992 UK university situated in North England was employed for our fieldwork (henceforth referred to as the case university). Undergraduate students who have participated in a simulation game as part of their curriculum met our inclusion criteria. Therefore, we included students from all years of study and from various programs, including BSc Business Management, BSc Business with International Management, BSc Business with Finance, BSc Business with Digital Marketing and BSc Sports Business. Ethical approval for this study was obtained from the case university's Ethics Committee. Participation was voluntary; informed consent was obtained from all participants prior to survey completion, and participants were informed of their right to withdraw at any time. All responses were collected anonymously, and no personally identifiable information was retained.

Different simulation games are adopted within the various courses in the Business School of the case university. The ones used in the programs we included in this paper are Edumundo's ProSim Advanced and Edumundo's Trainers Start-up simulation. During the implementation of the simulation game, students collaborate in groups to manage a simulated business, making decisions aligned with the course context and requirements. Following each simulation round, they review the outcomes of their decisions, as well as those of their competitors, and use this information to inform their subsequent strategic choices. It should be noted that competitors are the other companies/student groups that compete in the same market. To ensure fairness, all teams start from the same point in terms of their financial position and market share. Each round simulates a year of business activity. To ensure that all students participate and receive tutor support, all teams have to play the game in-class during the course tutorials. In this way, the module instructors can answer any student questions and, at the same time, monitor student engagement with the game.

To collect our data, we contacted all 1024 students via email with a request to participate in the study. A second email request for students to complete the questionnaire was sent three weeks later to the non-responders. After discarding some incomplete questionnaires, our final sample consisted of 251 students, a response rate of 24.5%. We ran mean comparisons test for all items, and no differences were detected between early and late respondents, indicating that there is no evidence of non-response bias. In the final sample, 57.4% of participants were male, 42.2% female and 0.4% preferred not to say. The average age of students was 19.94. Finally, 72.1% of the students were in the first year of their studies, 6% in the second year and 21.9% in the third year.

3.2. Operationalization of variables

To measure all variables in our conceptual framework, we used adaptations of previously validated scales we found in the relevant literature. So, to measure the quality of the experience students had with the simulation game we used a 6-item scale adapted from Vos and Brennan (2010). Moreover, for teamwork we used an adaptation of the 5-item scale developed by McCorkle et al. (1999) and for self-efficacy we employed a 4-item scale adapted from Hill and Elias (1990). Finally, to capture students' ability in reflective practice we used a 4-item scale developed by Basol and Evin Gencel (2013) and their ethical decision making confidence and intentions a 4-item scale adapted from Blewitt et al. (2018). All scales were Likert type, with anchors Strongly Disagree (1) to Strongly Agree (7).

Confirmatory factor analysis (CFA) was employed to test the unidimensionality and the discriminant and convergent validity of all scores. All scales were unidimensional and valid, according to the analysis results (Table 1) (Byrne, 2012). Specifically, all Average Variance Extracted (AVE) coefficients were found higher than 0.5, an indicator of significant convergent validity, and higher than the maximum squared correlation of each variable with the other variables, which indicates substantial discriminant validity. Furthermore, the relevant values of the Cronbach's alpha coefficients and composite reliability coefficients (CR), which were all above 0.7, indicated that all scales were reliable (Fornell & Larcker, 1981; Nunnally, 1978). Following the tests, the arithmetic mean of the items

Table 1
Descriptive statistics, validity and reliability.

Constructs	Mean	St Dev	Skewness	Kurtosis	AVE	Max Correlation^2	CR	Cronbach a
Simulation experience	4.69	1.01	−0.22	0.72	0.56	0.55	0.88	0.87
Teamwork	5.25	1.11	−0.79	0.72	0.69	0.61	0.92	0.92
Self-efficacy	4.87	1.20	−0.68	0.87	0.72	0.70	0.91	0.91
Reflective Practice	5.02	1.12	−0.57	0.50	0.67	0.61	0.89	0.89
Ethical Decision Making	4.82	1.15	−0.50	0.58	0.71	0.70	0.90	0.90

on each scale was calculated, combining the data into a single measurement for each scale. Since our data comes from a single questionnaire, we also explored potentially high levels of common method variance (Podsakoff et al., 2003). We did that by calculating the partial correlations of all variables using Tutor Support as the control variable. The findings show that the partial correlations and the correlations without the control variable did not differ significantly (Table 2). In addition, we employed Harman's single factor test, the results of which indicate that our study's items cannot be grouped in a single factor and, therefore, that common method variance among our variables is not unacceptably high (Aguirre-Urreta & Hu, 2019). Because of this, we could confidently assume that common method bias is low.

3.3. Results and findings

Aiming to test the validity of our research hypotheses, we employed Structural Equation Modeling (SEM) with the use of EQS 6.2. As Table 3 depicts, the results indicate a relatively good fit of the data with the hypothesized model ($X^2 = 576.56$, df = 218, CFI = 0.973, TLI = 0.969, RMSEA = 0.08), as suggested by the pertinent literature (Byrne, 2012). Moreover, five out of six beta coefficients in the regression paths were found significant. Most regression coefficients were found to be significant (Table 3). Specifically, the experience students had with the simulation game was positively and significantly associated with teamwork ($t = 9.288$, $p < 0.05$), self-efficacy ($t = 12.399$, $p < 0.05$) and reflective practice ($t = 9.433$, $p < 0.05$). Therefore, hypotheses H1a, H2a and H3a were confirmed. Moreover, teamwork was positively and significantly associated with students' confidence and intentions in practicing ethical decision making ($t = 3.870$, $p < 0.05$) and so was reflective practice ($t = 4.649$, $p < 0.05$). Hypotheses H2b and H3b are, hence, accepted. The relationship between self-efficacy and ethical decision making confidence and intentions was not found significant, leading us to reject hypothesis H1b.

4. Discussion

The aim of this study was to examine the effect of experiential learning, facilitated via the use of a web-based simulation game, on students' ethical decision making confidence and intentions. Our hypotheses posited that participation in a simulation game, even within a non-ethics-related context, will be associated with higher levels of students' self-efficacy, reflective practice, and teamwork skills, subsequently linked to higher levels of ethical decision making confidence and intensions. Our data analysis indicated a positive relationship between experiential learning and teamwork skills and reflective practice, which were, in turn, associated with higher levels of ethical decision making confidence and intentions. Therefore, we suggest that integrating experiential learning activities into the Business School curriculum may offer a multifaceted approach to supporting ethical decision making confidence and intentions among undergraduate students.

Teamwork is widely acknowledged as a vital competency for Business School graduates and serves as a fundamental and influential factor in shaping students' understanding of ethical values and principles. In line with literature (Tiwari et al., 2014; Vlachopoulos & Makri, 2017), our analysis suggests that experiential learning is associated with students' enhanced ability to work in groups. Furthermore, our findings indicate that teamwork is linked to higher levels of ethical decision making confidence and intentions, supporting existing literature (Mladenovic et al., 2019; Petocz & Dixon, 2011). Collaborating in groups may foster an active learning environment characterized by diverse perspectives, which can encourage students to critically reflect on and broaden their existing viewpoints, facilitating the exchange and synthesis of new ideas. Moreover, potential cultural differences among group members can heighten their awareness of how cultural diversity is associated with varying ethical perspectives and decision making approaches. This aligns with a key objective of business ethics education: to broaden students' cultural perspectives, as ethics are deeply rooted in and reflective of cultural values (Felton & Sims, 2005).

Our findings, in agreement with existing research (Açıl & Keçeci, 2024; Siewiorek et al., 2012; Silvia, 2012; Vlachopoulos & Makri, 2017), suggest an association between participation in simulation games and higher levels of reflective practice. This, in turn, is linked to higher levels of ethical decision making confidence and intentions, potentially through participants' critical engagement with real-world dilemmas. The unique value of simulation games in educational contexts lies in their ability to replicate complex, authentic scenarios that demand active decision making and ethical evaluation. These interactive experiences immerse students in situations where they must navigate uncertainty, conflicting interests, and moral ambiguity, thereby reinforcing the necessity of ethical considerations. Reflective practice plays a pivotal role in this process, as it enables individuals to bridge the gap between theoretical

Table 2
Correlations and partial correlations.

Control Variable: Tutor support	Simulation experience	Teamwork	Self-efficacy	Reflective Practice	Ethical Decision Making
Simulation experience	1	0.543	0.747	0.563	0.714
Teamwork	0.559[a]	1	0.690	0.778	0.662
Self-efficacy	0.753[a]	0.701[a]	1	0.736	0.833
Reflective Practice	0.570[a]	0.782[a]	0.742[a]	1	0.760
Ethical Decision Making	0.722[a]	0.674[a]	0.839[a]	0.765[a]	1

[a] Significant at 0.01 level.

Table 3
Fit indices and regression weights for the path model.

$X^2 = 576.56$, $df = 218$, $CFI = 0.973$, $TLI = 0.969$, $RMSEA = 0.08$	*Standardized Beta*	*SE*	*T*
Simulation Game Experience à Teamwork	0.745	*0.107*	*9.288*[a]
Simulation Game Experience à Self-efficacy	0.906	0.093	12.399[a]
Simulation Game Experience à Reflective Practice	0.769	0.167	9.433[a]
Teamwork à Ethical Decision Making	0.646	0.172	3.870[a]
Self-efficacy à Ethical Decision Making	−0.080	0.151	−0.53
Reflective Practice à Ethical Decision Making	0.676	0.376	4.649[a]

[a] Significant at 0.05 level.

ethical frameworks and their practical application. By engaging in reflective thought, students can critically examine their own beliefs, biases, and inconsistencies, leading to a deeper understanding of ethical principles and their professional relevance (Botelho, 2021; Fook, 2015). This suggests that simulation games do not merely condition students to choose the "right" decision from a normative standpoint but rather cultivate a reflective, analytical mindset that allows them to align their ethical choices with their professional identity and objectives. As such, ethical decision making in simulations moves beyond prescriptive morality to a more nuanced, introspective process that integrates personal values with professional integrity (Fook, 2015).

Our results suggest that although students' participation in simulation games is associated with higher levels in their self-efficacy, this does not appear to be associated with their ethical decision making confidence and intentions. In line with previous findings in the literature (Fitó-Bertran et al., 2014; van der Westhuizen & Goyayi, 2020), we found evidence suggesting that when students have a positive experience with a simulation game, they may develop their confidence in their ability to enact their work role and achieve business goals. This improvement, however, does not appear to be associated with their tendency to make ethical decisions, although extant literature suggests the contrary (Detert & Edmondson, 2011; Saks & Ashforth, 2000). A likely explanation for this finding lies in a measurement consideration: the self-efficacy items used in this study (see Appendix) appear to capture learning self-efficacy, that is, perceived ability to perform academic or work-related tasks rather than moral or ethical self-efficacy. This mismatch may mean that higher levels of task-related perceived ability do not necessarily translate into greater confidence and intentions in ethical decision making contexts. Beyond this measurement issue, the reason for this unexpected finding may be traced back to the way students perceive ethical decisions and their implications. Specifically, students may often feel they will not have the necessary power in the organizations they will work for in the future to make decisions, especially when ethical issues are involved (Vevere, 2014). It is possible, therefore, that even when they feel skillful enough to deal with a situation, they may feel they would lack the necessary power to choose the ethical path because of external pressures. Another possible explanation for our unexpected finding is that the association of the other two positive outcomes of students' involvement with a simulation game, i.e. teamwork and reflective practice, with ethical decision making confidence and intentions curtails the potential positive association with self-efficacy. As shown in Table 2, the bivariate correlation between self-efficacy and ethical decision making confidence and intentions is positive and significant, but the relationship becomes insignificant when teamwork and reflective practice come into the equation. This may suggest that self-efficacy could be beneficial in isolation, but its potential positive association may be overshadowed by the comparatively stronger associations of teamwork and reflective practice with ethical decision making confidence and intentions.

5. Theoretical and practical implications

This research provides a theoretical contribution to existing business ethics literature. Our study suggests that implementing an experiential pedagogic approach, without necessarily relating to an ethics-related context, is associated with higher levels of students' ethical decision making confidence and intentions. Our work not only aligns with previous research on the educational benefits of experiential learning but also contributes to the pedagogic business ethics literature by offering evidence on the potential role of experiential learning in supporting students' confidence and intentions in ethical decision making. There is limited empirical research in extant literature around this area and we contribute to and expand this ongoing academic conversation (Blewitt et al., 2018). The theoretical foundation of our hypothesized model was validated via our data analysis and our findings showed that experiential learning in business education is positively associated with students' ethical decision making confidence and intentions. These results build upon and extend existing research in business ethics pedagogy by indicating that the positive relationships between experiential learning and ethical decision making confidence and intentions, previously examined in business ethics training and teaching contexts, may also be observed within a broader business education setting (Blewitt et al., 2018; Jagger et al., 2016).

It is argued that the integration of curricula focused on ethics, corporate social responsibility, and environmental, social, and governance considerations is insufficient in fostering a comprehensive ethical foundation in business education (Rhodes, 2022). Our study offers an alternative perspective to traditional managerial education by broadening ethical perspectives in business pedagogy and curricula. By offering theoretical insights into embedding a more extensive ethical thinking in business education, our paper advances the discourse on developing future managers, who are not only equipped to navigate the complexities of an increasingly dynamic and uncertain business environment but also committed to fulfilling their responsibilities toward society and the planet.

Our study offers meaningful implications for universities and managers concerned with preparing ethically informed and socially responsible future leaders. For universities, and Business Schools in particular, our findings highlight the potential value of integrating simulation games into courses' teaching, learning and assessment strategies. Our study suggests that participation in simulation games

can be an effective experiential learning tool, which is positively associated with students' self-efficacy, reflective practice, and teamwork skills. Through experiential learning, students may recognize that ethics is not an isolated or purely theoretical concept but rather an integral aspect of all business decision making. While a decision may be categorized as marketing, production, or finance-related, ethical considerations are inherently embedded within it, generating implications for a diverse range of stakeholders. Based on our findings, we recommend that universities may wish to consider the broader use of simulations as a means of encouraging reflection on ethical challenges that arise in the workplace. By recreating real-world business environments in a low-risk setting, simulation games can provide students with opportunities to explore the ethical dimensions of managerial decision making and reflect on how they might respond to similar situations in their future professional careers.

Simulation games have long been considered an effective tool in corporate training (Fowler & Pusch, 2010; Koltai & Tamás, 2022; Lee & Yu, 2025). To that end, for organizations and managers seeking to develop their employees and support them in becoming ethical practitioners, our study offers some preliminary guidance on how this might be achieved through the use of simulation games. First, they may benefit from emphasizing the development of teamwork skills which may facilitate employees' participation in such games and potentially enhance their learning experience. Similarly, encouraging reflective practice within the organization, may support employees in critically evaluating their actions and considering how these align with ethical standards.

6. Limitations and suggestions for future research

The present study is not without limitations, each of which offers opportunities for future research. First, in our study we followed a deductive, cross-sectional approach capturing student perceptions at a single point in time at one UK based University. Future research should also follow a longitudinal approach and measure students' perception of their ability to make ethical decisions several times and especially while they are employed. Moreover, our data were collected with the use of a single research tool, which increases the possibility of common method bias occurring. Future research should use multiple sources of information to eliminate such risk. At the same time, future research should replicate our study across different contexts (e.g. different universities, different countries) to explore potential cultural, national, and institutional influences on the study's findings. Another limitation of our study relates to the fact that the two different simulation games were used as one stimulus. Future research should use a single simulation game for all students or develop a research design that can explore differences in the study's results based on the simulation game that was employed. In addition, our sample consists heavily of first-year students (72.1%). Future studies should make sure there is a more even distribution of participants across all levels of study.

Additional limitations derive from the scope of our study, which is relatively narrow. Although this was not part of our research objectives, future studies could incorporate other potential antecedents of ethical behavior that could be enhanced by simulation games, such as emotional intelligence, empowerment, and others. Finally, future research could incorporate in the theoretical framework and test moderating effects deriving from organizational variables (e.g. culture, organizational pressure) and individual variables (e.g. personal ethics, cognitive biases).

CRediT authorship contribution statement

Foteini Stavropoulou: Writing – original draft, Data curation, Conceptualization. **Kostas Zervas:** Writing – original draft, Data curation, Conceptualization. **Ioannis Kostopoulos:** Writing – original draft, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix. Measurement Items Used in the Study

Variable	Items
Experiential learning via simulation game	I believe that I learned a lot by participating in the simulation game
	Overall, I felt more engaged by using the business simulation game
	Business simulation games help me understand ethical dilemmas
	The experience enabled me to enhance real-world knowledge and skills
	The business simulation game has deepened my learning
	The simulation helped me to better understand the impact of business decisions
Teamwork skills development	Overall, the simulation helped me learn how to interact with other individuals in a team environment
	Overall, the simulation helped me learn how to better relate to team members
	Overall, the simulation taught me the importance of negotiation between group members
	Overall, the simulation taught me the importance of teamwork
	Overall, the simulation taught me the importance of synergy (the output of the group is greater than the output of individuals working alone)
Self-efficacy	Overall, the simulation improved my ability to learn new work-related knowledge and skills

(*continued on next page*)

(*continued*)

Variable	Items
	Overall, I feel because of the simulation I am more capable of acquiring new learning
	Overall, due to the simulation I enjoy learning more than before
	Overall, due to the simulation I feel more motivated to keep up to date
Reflective practice	The simulation has definitely helped me better understand the feelings of the people in my team
	The simulation has definitely helped me express my feelings and opinion to others in my group
	Looking back at the simulation, I feel I can reflect on my feelings about the people in my team
	Overall, because of the simulation, I felt that I can better empathize with people in my team
Ethical decision-making confidence and intentions	Overall, due to the simulation I feel more confident in making ethical decisions in a business environment
	Overall, due to the simulation I feel more confident in being able to tell right from wrong in a business environment
	Overall, due to the simulation I will be making professional decisions based on my value system
	Overall, because of the simulation I feel that in my career I will be treating people at work in an ethical way

Appendix 2. Factor loadings, Standard Errors and Significance Tests

Item	Estimate	Std. Error	z-value	p
Experiential learning via simulation game	1.000	0.000		
I believe that I learned a lot by participating in the simulation game				
Overall, I felt more engaged by using the business simulation game	1.053	0.06329	16.64	< 0.001
Business simulation games help me understand ethical dilemmas	0.9408	0.06153	15.29	< 0.001
The experience enabled me to enhance real-world knowledge and skills	0.8069	0.07884	10.23	< 0.001
The business simulation game has deepened my learning	0.8527	0.06069	14.05	< 0.001
The simulation helped me to better understand the impact of business decisions	0.8246	0.07867	10.48	< 0.001
Teamwork skills development	1.000	0.000		
Overall, the simulation helped me learn how to interact with other individuals in a team environment				
Overall, the simulation helped me learn how to better relate to team members	1.132	0.06800	16.65	< 0.001
Overall, the simulation taught me the importance of negotiation between group members	1.110	0.06503	17.06	< 0.001
Overall, the simulation taught me the importance of teamwork	1.150	0.07183	16.01	< 0.001
Overall, the simulation taught me the importance of synergy (the output of the group is greater than the output of individuals working alone)	1.014	0.07483	13.55	< 0.001
Self-efficacy	1.000	0.000		
Overall, the simulation improved my ability to learn new work-related knowledge and skills				
Overall, I feel because of the simulation I am more capable of acquiring new learning	1.104	0.05490	20.11	< 0.001
Overall, due to the simulation I enjoy learning more than before	1.155	0.06578	17.55	< 0.001
Overall, due to the simulation I feel more motivated to keep up to date	1.051	0.06748	15.57	< 0.001
Reflective practice	1.000	0.000		
The simulation has definitely helped me better understand the feelings of the people in my team				
The simulation has definitely helped me express my feelings and opinion to others in my group	0.9369	0.05881	15.93	< 0.001
Looking back at the simulation, I feel I can reflect on my feelings about the people in my team	0.8813	0.05745	15.34	< 0.001
Overall, because of the simulation, I felt that I can better empathize with people in my team	0.9707	0.06323	15.35	< 0.001
Ethical decision-making confidence and intentions	1.000	0.000		
Overall, due to the simulation I feel more confident in making ethical decisions in a business environment				
Overall, due to the simulation I feel more confident in being able to tell right from wrong in a business environment	0.9647	0.06065	15.90	< 0.001
Overall, due to the simulation I will be making professional decisions based on my value system	0.9923	0.05646	17.58	< 0.001
Overall, because of the simulation I feel that in my career I will be treating people at work in an ethical way	0.9556	0.06358	15.03	< 0.001

Data availability

Data will be made available on request.

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