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WE CAN ALL BE WINNERS - THE INFLUENCE OF TEAM COMPOSITION AND A DELIVERY MODALITY ON BUSINESS STUDENTS' SATISFACTION AND SIMULATION PERFORMANCE

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Most undergraduate and graduate business programs contain a culminating capstone experience as part of the standard curriculum. So far, business capstone courses have often strived to be uniform across modalities (i.e. either online or face-to-face, they were of uniform nature) and they have been rigorous and impactful courses. Additionally, many business programs have adopted simulations or other forms of game-based learning in their capstone courses. A sample of 122 students engaged in a simulation game as part of their capstone experience was used in this study in order to examine whether modality differences did affect the students' experiences (their satisfaction with the course and performance) or not, and also whether it helped them to be on teams comprised of different business majors or not. While, on the one hand, a hypothesis that significant differences would be seen due to a different modality and group composition was initially set, the counterintuitive findings obtained during the research were indicative of the fact that students' experiences could be positive across the modalities and the varying composition so long as the instructor's efforts were directed towards rigor, engagement, and uniformity of experience in the courses.

Keywords: simulations, capstone course, course modality, online classes, business studies, undergraduate students

JEL Classification: A22, C12, C83, M10

INTRODUCTION

Game-based learning (GBL) involves using actual games in a course so as to enhance the learning experience, whereas gamification is implicative of using gaming elements in a nongame context (Wiggins, 2016). GBL also commonly includes gamification elements such as rewards, leader boards, competition, and so forth. K. M. Kapp (2012) defines gamification as involving game-based mechanics and processes in a way that engages people simultaneously promoting action, learning,

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and problem solving. Additionally, while GBL is indeed digital in nature, its use is not restricted by/to a modality type - namely, it can be used both online and in face-to-face classroom settings. Therefore, GBL can be applied by the instructors teaching in either of these primary modalities.

Most higher education institutions are now increasingly offering courses in multiple modalities and many universities offer even their most rigorous courses as online distance-learning options in the post-COVID19 era. Capstones, where students synthesize and bring forth all that they have learned during the program, have also increasingly become available online (Devine, Bourgault & Schwartz, 2020). Capstone experiences are designed to be rigorous, all-encompassing courses allowing students to leverage the knowledge they have gained, all in order to succeed in such high-impact courses. Students are also becoming more comfortable with online learning and GBL as digital natives (Van Eck, 2006). While online learning is not a novelty, the ubiquity of technology and the increasing adoption of online learning platforms across the world do necessitate more research in the domain. There are newer developments in online learning, such as the nascent use of a well-developed virtual reality or the ease of access to GBL. This rapid growth and the increasing adoption of GBL dictates that it is delved into more deeply and its various nuances are subject to exploration. GBL is often associated with serious games in mainstream education which are the essentially interactive gaming software intended to be used for more than just entertainment (Schmitz, Felicia & Bignami, 2015). Serious games, such as simulations, are used to teach complex business concepts and allow students to engage in applied learning exercises. The underlying basis for simulations is the real-world scenarios that mimic the activities professionals would perform on their jobs (Neely & Tucker, 2012). As far as business programs are concerned, this often takes the form of a strategic management simulation pulling together various functional areas of the business world and challenging students to engage in holistic decision-making. Instructors often strive to prepare future economy leaders and make them be ready to help the evolution and growth of their environments (Bogetić, Đorđević & Ćoćkalo, 2011). Additionally, business courses often focus on teamwork as an important learning outcome and teamwork aspects, particularly the online aspect, are a topic of growing interest both practically and academically (Tappert & Stix, 2010). Thus, the subject matter of the study presented herein involves a deeper dive into GBL, with a particular reference to using simulation in capstones and exploring the positive outcomes sought in this particular context. The research goals of the study involve exploring the impacts of various modality-types on the students' experiences and determining whether the team composition is relevant when GBL is concerned.

There are numerous aspects to GBL involving simulations that need to be explored as their popularity increases and the answers to the following research questions are sought in this paper:

1. Does a course modality (online *versus* face-to-face) influence the way students perform in a simulation assessment and their course satisfaction?

2. Does being part of a team of the same disciplinary majors or being in an nterdisciplinary team have an influence on the students' satisfaction or performance?

The survey data were collected from the students, while the data collected from the simulation were also used for the purpose of the supporting the analysis. There are five specific hypotheses for these research questions that were tested.

Following the Introduction, the remaining part of the paper is structured as follows: there is a literature review providing an overview of the extant literature on game-based learning, business capstone courses and the simulation use and the team composition; the third section of the paper comprises the hypotheses development, whereas in the fourth methods section, the research sample, procedure and analysis, and a detailed overview of the obtained results are discussed. The final section, Conclusion, includes the major takeaways, as well as the limitations of the research study and its future directions.

LITERATURE REVIEW

Game-based learning

Game-based learning (GBL) involves the intentional use of games (typically digital games, but not always and necessarily) or simulations so as to achieve specific learning objectives (Wiggins, 2016). As technology growth continues exponentially, so does the GBL and gamification trend in education (Chung, Shen & Qiu, 2019). The typical teaching styles of being lectured on or simply perusing written materials are not quite a norm any longer. Even the most basic classes supplement their traditional materials with multimedia content while those seeking to be more engaging add games or simulations. Today's digital native students are increasingly comfortable with simulations (Ganesh & Sun, 2009). Indeed, the increasing use of games, especially in online settings, has been indicative of positive developments in instructional design not experienced in the last decade or so (Wiggins, 2016). The use of gaming applications, such as simulations, leads to greater student engagement (Reid, Brown & Tabibzadeh, 2012), makes learning more meaningful (Klassen & Willoughby, 2003), and prepares students for practical scenarios better (Chung *et al*, 2019). The "gamefulness" aspect of GBL essentially relates to how engaging a game is and what its experiential qualities are regardless of whether the game is played online or in-person (Wiggins, 2016) and is an important factor when speaking about student engagement. The simulations which offer a version of a real environment where learners engage in realistic decision-making are essentially serious games defined as "computer-based learning environments…Their purpose is to train the learner to a specific domain of expertise, while making learning fun" (Callies, Gravel, Beaudry & Basque, 2017, p. 1178).

Business capstone courses and simulation use

Business capstone courses help students of different majors representing different functional business areas (marketing, management, human resources, operations, finance, accounting, business analysis) to integrate their knowledge and learning from across all the business courses in a way that elevates their work to being more comprehensive, not only limited to forming attitudes through their functional lenses (Stephen, Parente & Brown, 2002). Thus, business capstone courses allow students to see how the core business disciplines are integrated so as to gain an improved understanding of how organizations can strategically be managed, and competitive advantage maximized (Albert & Grzeda, 2015).

Education, particularly business courses, should equip their students with professional skills and wherewithal to succeed in the real world (Pratt & Han, 2016). Learning about ethics, decision-making, latest technologies, and so on is relevant for preparing students for the future (Frank, 2020). Authentic assessments reflective of what students need to know for gainful employment and practical utility have become highly regarded in higher education (Neely & Tucker, 2012). Therefore, an authentic capstone assignment must entail that students engage in critical thinking, integrate functional areas, and learn about team dynamics, which are all the requirements easily met through using simulations simultaneously also ensuring that there is a link to a professional environment, equifinality in the approach, a possibility of action learning, and finally a degree of the autonomy of learning processes (Seaton & Boyd, 2008). Many businesses utilize simulations and modeling particularly in the financial sector (Djuric, 2013).

Using a well-developed simulation in a business capstone course that has gamification elements incorporated into it can ensure a greater engagement of students. The simulation used in this study was GLO-BUS. It is an online strategy simulation used in business programs across the world. As described by its creators (GLO-BUS, 2023), this game allows up to 12 teams to compete in the industry of (1) wearable video cameras and (2) advanced camera-equipped copter drones. All teams compete for the global market selling their products to customers in the four different regions: Europe-Africa, North America,

Asia-Pacific, and Latin America. Each team consisting of up to 5 comanagers is responsible for evaluating the market and the competitive conditions in the two product categories and the team members decide how to react to competitors' actions while establishing a long-term strategy for their company and making "yearly" decisions in each round of the gameplay. The decisions they make are on various aspects and include their products design and performance, the assembly processes, compensating their workforce, pricing strategies, marketing efforts, corporate social responsibility actions, and financing options. Additionally, the comanagers look at their respective companies' accounting and cost data, simultaneously considering import duties and exchange rate fluctuations as well, all the while aiming to meet their shareholders' expectations.

Thus, the GLO-BUS simulation used by the students in this study included "the key elements of gamified systems" (Mauroner, 2019): (1) *feedback* - as the students received continuous feedback when they made "tentative" moves, as well as *feedback* after each round of the gameplay with (2) *transparency* - as they could see the comparisons with the other competitors and their own past decisions, all this in light of the (3) *objectives and tasks* - provided at the outset, accompanied by (4) *storytelling* - as the game is played in the context of how "companies" operating in a specific industry compete against their rivals in the global context, wherein (5) *points* - are awarded in each round, and (6) *badges* - which can be earned for certain accomplishments in the form of "rewards", given the fact that students are engaged in a (7) *contest* - competing with the rival companies comprised of the other student teams in their classes, at their university, and globally, while also being engaged in (8) *collaboration* - amongst their own team members in order to succeed in each round which must be completed in a predefined (9) *time*, where they also have the ability to learn from (10) r*epetition* - as each round is similar and students are engaged in multiple rounds of the gameplay, simultaneously also enjoying a certain level of (11) *personalization* - where they can customize certain aspects of their company, such as the company name.

A strong capstone course that utilizes simulations thus requires that students should (1) utilize and compile a past curriculum material, (2) be engaged in insightful teamwork, (3) solve problems representative of what they would have to solve in the real world, (4) learn about professionalism, and (5) learn about decision-making with regard to discipline-related projects so as to make their learning experience more meaningful (Reid *et al*, 2012). Simulations are also much more process-focused than other approaches as they often entail "playing" multiple rounds where students can see the analysis of their past performance, consider new actions and decisions, and review the consequences of said actions repeatedly, thereby developing a strategic long-term focus required to run a business in today's world (Seaton & Boyd, 2008). The foundation for the complexity of a simulation is laid down in the variables that comprise the game and actions should lead to a variable output that then results in feedback and learning (Callies *et al*, 2017). Thus, while highly engaging, these complex simulation assessments are also effort-intensive for both learners and instructors (Stephen *et al*, 2002).

Team composition

From the point of view of business courses, teams are comprised of "a group of individuals having the responsibility to jointly accomplish an objective, and in this course to successfully complete a project" (Tappert & Stik, 2010, p. 208). The extant literature has examined team factors in capstone classes in various ways with interesting conclusions. The team size is a dimension often perceived when simulations are used (Besse, Vogelsang & Zdunich, 2020). Recent research on simulation games has found that one to three members are suboptimal as there is a lack of synergy and collaboration, whereas four members is the most effective size (Parnell & Crandall, 2021). Others look at whether team members are predisposed to wanting to work collaboratively and how that would influence their interactions on the team (Driscoll, Jicha, Hunt, Tichavsky & Thompson, 2012). Variations in team performance can be attributed to a variety of factors, both the individual-level aspects, such as identity issues (Chandna, 2022), or the macro-level

aspects, such as team structures (Saizew, Evans, Allan & Martin, 2021). To that end, the exploration presented in this study was carried out with the focus on team composition related to the students' majors. Performance for individual students in varying majors has shown that the students of specific majors, such as finance, often outperform the students of the other majors (Alstete & Beutell, 2021). Our intent was to examine the teams as a whole and to explore whether the teams where all students were of the same major, e.g. all students on the team were in marketing or all students were in finance, performed differently from the teams that were more "well-rounded" in terms of being comprised of the members of different business majors, e.g., out of the four team members, one was in marketing, another in finance, another in management, and another in the supply chain. Thus, this research study sought to examine the differences between the composition of a disciplinary team and the composition of an interdisciplinary team with regard to the majors of the business students on the team.

Hypotheses development

Based on the review of the extant literature as set forth thus far, it is proposed that team composition and the modality have an influence on the students in different ways.

As many as five hypotheses were tested so as to answer the set research questions related to the modality differences (online *versus* face-to-face) and team composition (disciplinary *versus* interdisciplinary), and to examine the four subtypes which may be possible due to these variations as is shown in the 2x2 grid (Table 1).

Based on the combinations of modality differences and team composition presented in Table 1, the following hypotheses are tested:

H1a: There are differences in the students' overall satisfaction with the course based on the students' participation in either a disciplinary or interdisciplinary team.

H1b: There are differences in the students' performance in the simulation based on the students' participation in either a disciplinary or interdisciplinary team.

H2a: There are differences in the students' overall satisfaction with the course based on the students' participation in an online or face-to-face modality.

H2b: There are differences in the students' performance in the simulation based on the students' participation in an online or face-to-face modality.

H3: Interdisciplinary teams in the face-to-face modality perform the best in the simulation.

Table 1 The 2x2 grid showing the four possible combinations of the modality and team composition

	Disciplinary teams (all have the same majors e.g. all are marketing students)	Interdisciplinary teams (students of different business majors)
Face-to-face	Disciplinary teams in face-to-face classes	Interdisciplinary teams in face-to-face classes
Online	Disciplinary teams in online classes	Interdisciplinary teams in online classes

Source: Authors

RESEARCH METHODS

The sample

The research study data were collected from the five sections of a capstone course of a midwestern regional university called the University of Wisconsin-Green Bay in 2022. The course was a comprehensive business capstone building on the business curriculum of the entire business program that includes general education courses, foundational business courses in all business majors, as well lower- and higher-level

Table 2 The descriptive statistics of the participants

Variable	Criteria	Frequency	Percentage
Class modality	Online	78	63.9%
	Face-to-Face	44	36.1%
Gender	Female	65	53.3%
	Male	56	45.9%
	Non-binary	1	0.8%
Age group	19 - 21	33	27.0%
	22 - 24	54	44.3%
	25 - 27	9	7.4%
	28 - 30	6	4.9%
	31+	20	16.4%
Major	Accounting	11	9.0%
	Business Administration	71	58.2%
	Finance	10	8.2%
	Human resource management	9	7.4%
	Management	2	1.6%
	Marketing	19	15.6%

Source: Authors

courses in their specific business majors. The research procedure was approved by the Institutional Review Board (IRB) of the University and the participants gave their informed consent. The usable sample was n = 122 and consisted of 53% female and 46% male students, 64% online and 36% face-to-face, and the age group ranged from 19 years of age to 31+ years of age. The students' majors included general business administration, finance, human resource management, management, and marketing. Table 2 depicts the details of the participants.

The research procedure

The two instructors collaborated in order to develop their capstone courses to ensure comparability and uniformity in the course materials and content. The same textbook, the formative assignments, and the project simulation were applied across the course sections. Both instructors used similar schedules, as well as the quiz and exam frequencies, and the content. Thus, the online and face-to-face students were exposed to similar course materials, schedules, and evaluation processes. The same simulation (GLO-BUS) was used for all the students across the classes. GLO-BUS is well-established as a popular simulation game for business capstone courses with applied decision-making and rich complexity (Alstete & Beutell, 2021). The additional resources for the simulation such as the playbook, learning videos, and helpful documents were provided to all the students in all the classes. The survey in question was announced during the semester. All the students were invited to participate and were awarded an extra credit for such participation. The survey link with the instructions was distributed by the instructors. After the students had completed the survey, they received bonus points, which were approximately 5% of the total grade. Alternatively, students had options to earn similar bonus points by writing an essay instead of participating in the survey, i.e. they were not compelled to take part in the survey and had an alternative option available for them to take. A total of 122 students participated voluntarily in the survey (the 88.27% participation rate).

The data analysis

The biggest number of the items included in the survey were measured on a 7-point Likert scale so as to capture the students' level of agreement or

Table 3 The performance and satisfaction of the disciplinary/interdisciplinary teams

H_o	Item	Disciplinary n =31		Interdisciplinary n = 91		P
		Mean	S.D.	Mean	S.D.	
H_{1a}	My overall impression of this course is positive.	2.16	1.19	1.89	1.10	0.247
H_{1a}	Overall, the quality of the course is great.	2.42	1.21	2.09	1.27	0.206
H_{1a}	The course offers good value for the tuition.	2.42	1.36	2.21	1.43	0.474
H_{1a}	Overall, this course is worth taking.	2.42	1.39	2.03	1.39	0.184
H_{1a}	Overall, I am satisfied with the course.	2.32	1.14	2.09	1.39	0.398
H_{1b}	The performance of the simulation - the score	93.84	9.27	95.68	15.71	0.434

Notes: The questions for (H_{1a}) asked the participants to rate the effectiveness of the course overall. The items were introduced after the following sentence: "Please, use the scale below to indicate your level of agreement with the given statement." The ranking scale 1 - 7, where 1 = I strongly agree with the positive evaluation; 4 = I neither agree nor disagree; 7 = I strongly disagree. A smaller value indicates stronger agreement with the favorable statement.

Source: Authors

disagreement with a statement. The study measures the variables on a 7-point scale with possible scale responses: 1 (strongly agree), 2 (agree), 3 (somewhat agree), 4 (neither agree nor disagree), 5 (somewhat disagree), 6 (disagree) and 7 (strongly disagree). The course modality (online or face-to-face) was recorded by means of a binary "yes/no" scale. Additionally, the students indicated their majors (e.g. Marketing) during the survey. Each team was manually coded and whether the team was disciplinary or interdisciplinary was identified. The performance of the simulation was measured using the simulation system-generated scores for each team. The simulation automatically calculated the "overall score" considering the performance of the team with respect to their initial starting point (100 points). The simulation system assigns equal weights to all the five criteria (i.e. earnings per share, return on equity, the stock price, the credit rating, and the image rating), which was also adhered to by the instructors. Importantly, the system also compared the results to a simulated global environment and ranked the teams against each other. Thus, the system-generated overall score was found to have served well as the standard performance measure across sections. Those system-generated team scores for each team member of each team were assigned. For this sample, the score ranged from 57 to 111.

Conceptualizing online and face-to-face as the two different populations, an independent-sample t-test was done in order to test the hypotheses. The null hypothesis says that the observed mean was not significantly different for the two populations (i.e. online/face-to-face or disciplinary/interdisciplinary). Tables 3 and 4 present the hypotheses test results for the disciplinary/interdisciplinary teams (H_1) and the online/face-to-face (H_2) modalities.

RESULTS AND DISCUSSION

According to the results presented in Table 3, there is no statistically significant variation in satisfaction and performance between the disciplinary and interdisciplinary teams in the data. Satisfaction with five items was measured, namely: the first item says that the students in the disciplinary teams (the mean = 2.16 and the standard deviation = 1.19) pose quite similar positive overall impressions to the interdisciplinary teams (the mean = 1.89 and the standard deviation = 1.10). A similar impression is seen in the "quality of the course" (the mean $_{\text{Disciplinary}}$ = 2.42 and the standard deviation $_{\text{Disciplinary}}$ = 1.19; the mean $_{\text{Interdisciplinary}}$ = 2.09 and the standard deviation $_{\text{Disciplinary}}$ = 1.27), "good value for tuition" (the mean

$_{Disciplinary}$ = 2.42 and the standard deviation $_{Disciplinary}$ = 1.21; the mean $_{Interdisciplinary}$ = 2.21 and the standard deviation $_{Disciplinary}$ = 1.43), "the course is worth taking" (the mean $_{Disciplinary}$ = 2.42 and the standard deviation $_{Disciplinary}$ = 1.39; the mean $_{Interdisciplinary}$ = 2.03 and the standard deviation $_{Disciplinary}$ = 1.39), and "satisfied with the course" (the mean $_{Disciplinary}$ = 2.32 and the standard deviation $_{Disciplinary}$ = 1.14; the mean $_{Interdisciplinary}$ = 2.09 and the standard deviation $_{Disciplinary}$ = 1.39). The p-values (0.247, 0.206, 0.474, 0.184, and 0.398, respectively) are greater than 0.05. Thus, the null hypothesis saying that there is similar satisfaction in the disciplinary and interdisciplinary students is not rejected. Again, no statistically significant (p-value 0.434 > 0.05) difference was found between the performance of the disciplinary (the mean $_{Disciplinary}$ = 93.84 and the standard deviation $_{Disciplinary}$ = 9.27) and interdisciplinary (the mean $_{Interdisciplinary}$ = 95.68 and the standard deviation $_{Disciplinary}$ = 15.71) teams.

A similar analytical approach was applied to test the hypotheses pertaining to the course modality. Table 4 shows the results.

Similar results were also found for this set of hypotheses with regard to the modality (online/face-to-face). No statistically significant difference in satisfaction and performance between the online and face-to-face students could be found in the data. Satisfaction with five items was measured. The first item says that the online students (the mean = 2.03 and the standard deviation = 1.13) have similar positive overall impressions as the face-to-face students do (the mean = 1.84 and the standard deviation = 1.12). The students expressed their similar agreement with respect to the "quality of the course" (the mean $_{Online}$ = 2.27 and the standard deviation $_{Online}$ = 1.23; the mean $_{F-2-F}$ = 2.00 and the standard deviation $_{F-2-F}$ = 1.29), "good value for tuition" (the mean $_{Online}$ = 2.35 and the standard deviation $_{Online}$ = 1.34; the mean $_{F-2-F}$ = 2.11 and the standard deviation $_{F-2-F}$ = 1.53), "the course is worth taking" (the mean $_{Online}$ = 2.22 and the standard deviation $_{Online}$ = 1.37; the mean $_{F-2-F}$ = 1.98 and the standard deviation $_{F-2-F}$ = 1.44), and "satisfied with the course" (the mean $_{Online}$ = 2.19 and the standard deviation $_{Online}$ = 1.25; the mean $_{F-2-F}$ = 2.07 and the standard deviation $_{F-2-F}$ = 1.47). Again, the p-values (0.385, 0.258, 0.383, 0.363, and 0.622, respectively) are greater than 0.05. Thus, the null hypotheses saying that there is similar satisfaction in the online and face-to-face students is not rejected. Again, no statistically significant (p-value 0.434 > 0.05) difference between the performance of the disciplinary (the mean $_{online}$ = 95.49 and the standard deviation $_{online}$ = 14.58) and face-to-face (the mean $_{F-2-F}$ = 94.73 and the standard deviation $_{F-2-F}$ = 14.07) teams was found.

Table 4 The performance and satisfaction of the online/face-to-face modality

H_o	Item	Online n =78		Face-to-Face n = 44		P
		Mean	S.D.	Mean	S.D.	
H_{2a}	My overall impression of this course is positive.	2.03	1.13	1.84	1.12	0.385
H_{2a}	Overall, the quality of the course is great.	2.27	1.23	2.00	1.29	0.258
H_{2a}	The course offers good value for the tuition.	2.35	1.34	2.11	1.53	0.383
H_{2a}	Overall, this course is worth taking.	2.22	1.37	1.98	1.44	0.363
H_{2a}	Overall, I am satisfied with the course.	2.19	1.25	2.07	1.47	0.622
H_{2b}	The performance of the simulation - the score	95.49	14.58	94.73	14.07	0.780

Notes: The questions for (H_{2a}) asked the participants to rate the effectiveness of the course overall. The items were introduced after the following sentence: "Please, use the scale below to indicate your level of agreement with the given statement." The ranking scale 1 - 7, where 1 = I strongly agree with the positive evaluation; 4 = I neither agree nor disagree; 7 = I strongly disagree. A smaller value indicates stronger agreement with the favorable statement.

Source: Authors

To test the hypothesis related to the simulation performance and the four types of teams (2x2), a one-way ANOVA was done. No statistically significant difference in the students' performance was found. Table 5 shows the results.

The culminating capstone experience is not unique to the business programs but is quite common across the spectrum of academic programs (Devine *et al*, 2020). The utility of simulations and their practical significance has been touched upon multiple times, but it does bear repeating. The instructors' reluctance to adopt the simulations that may stem from a personal preference aside, the once worrisome difficulty of incorporation or availability (Schmitz *et al*, 2015), is now a thing of the past. Simulations such as this used in this research study are easily available, given the fact they are used by thousands of prestigious higher-education institutions and often come with prepared syllabi and steps of integration into courses. Simulations are quite ideal for the capstone courses built upon the prior curriculum content as this type of GBL requires that students should draw upon their strong background of the course content in conjunction with their practical skills in order for them to succeed (Neely & Tucker, 2012). This paper discusses the benefits of using simulations as a useful GBL tool. Capstone courses in business extensively use capstone courses and this paper indicates that the use of simulation need not be restricted to particular modalities of capstone classes. Positive outcomes of performance and satisfaction are experienced by all the students regardless of the modality. In practical terms, instructors can thus rest assured that the use of simulation may potentially be successful in both online and in-person modalities. The use of game-based learning (GBL) is growing and with the advent of virtual reality/augmented reality, it is only expected that GBL will become adopted even more broadly in the future. Serious games, such as business simulations in capstone courses, can offer an authentic assessment opportunity with positive outcomes relating to satisfaction with the course and strong performance. From a theoretical standpoint, this paper is a demonstration of support for research supportive of consistency in pedagogical approaches and practices regardless of the modality. With the use of robust design and transparency in information sharing, it is possible for all students to have a positive course experience, whereas even factors such as the course modality or team composition are considered all but barriers to learning. Thus, as the growth of online education abounds, online learning should be seen as an opportunity to ensure greater accessibility and grow programs instead of viewing it as "atypical", all the while remembering that rigor and course content need not be compromised in online learning.

Although the interdisciplinary team (see Table 3) and the students in the face-to-face modality (see Table 4) posted more favorable scores (i.e. lower scores close to Agree = 2) than the disciplinary teams and the students in the online modality, contrary to what intuitively would be expected, the data in this study show no statistically significant difference in overall satisfaction and the performance scores. The standardized approach across both modalities (online, as well as face-to-face) is believed to have helped the instructors to navigate the simulation experience and assisted in ensuring consistent

Table 5 The ANOVA results

ANOVA					
Score - Simulation					
	Sum of Squares	df	Mean Square	F	Sig.
Between groups	706.752	3	235.584	1.150	.332
Within groups	24181.707	118	204.930		
Total	24888.459	121			

Source: Authors

satisfaction and performance. There are other instances in the extant literature where the influence exerted by course modalities was contrary to what would commonly be expected, such as online classes performing better than those face-to-face (Alstete & Beutell, 2021), satisfaction being identical regardless of the modality (Driscoll *et al*, 2012), and knowledge retention being quite similar across modalities (Girard, Yerby & Floyd, 2016). In a fashion similar to the conclusions presented in this paper, A. Driscoll *et al*. (2012) attributed similarity in outcomes to the use of sound pedagogical practices and the instructor's efforts, such as rigor, consistency, and interaction with their students.

CONCLUSION

The findings of this research study confirm that preliminary front-end efforts by the instructors to ensure the similarity of interactions and connectedness with their students regardless of the modality, simultaneously maintaining rigor and quality in their coursework and course content, along with the use of the best practices, such as using a high-quality simulation for game-based learning, lead to positive outcomes for all the students.

As is the case with any empirical study involving students, this paper is not deprived of certain limitations. Firstly, generalizability is a limitation. This research study is based upon data pertaining to a regional university in the United States. While the advent of online education and the proliferation of information technology tools means that the students who are digital natives tend to have similar perspectives when speaking about the use of technological resources, it cannot be said with certainty that the students in the other parts of the world who use simulations would have similar experiences as well. Secondly, the timing of this research study is a factor, too. Some of the interesting results regarding a lack of difference in the modality were obtained owing to how comfortable students are in the post-COVID era with online learning as they have been engaging themselves in online learning extensively in the last few years. Over time, students in a traditional in-person class and those engaging themselves in online learning may be found to start diverging again and the modality may become a factor of relevance where once it was not. Thirdly, this research study did not factor in aspects such as attitudes towards gameplay or experience with games (Quick & Atkinson, 2014). Lastly, while consistency is perceived when overall satisfaction and simulation scores regardless of team composition or the modality are concerned, there has been no investigation in this study into the other critical factors, such as how students perceived the development of their soft skills (for example communication, teamwork, and problem-solving).

These limitations, however, offer interesting avenues for further research. It would certainly be worthwhile to study whether there is a great deal of variation when students in the US are in question compared to the countries considered to be the Global South, such as China or India, when speaking about the use of business simulations. Additionally, it would also be interesting to see whether the aspects such as skill development or leadership development may be the positive outcomes differently influenced by the modality or team composition. The other individual-level factors, such as goal orientation, attitudes towards games, competitiveness, or personality types, could also provide more insights into GBL and simulations. The readiness of the workforce and their preparedness for a career are also the important research areas that are directly influenced by capstone courses. Thus, the use of simulation to teach soft skills can be explored as well. Additionally, this paper is restricted to the use of one type of simulation only for all students as the control measure to note the other areas of variation, but the use of different types of simulations may also show differences where perhaps simulation has a greater degree of autonomy or a more engaging game-play mechanism.

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