The Journal of Social Media for Learning 2023

The co-creation of a digital escape room designed to develop students' digital confidence.

Sarah Honeychurch and Matt Offord
University of Glasgow, UK

Abstract

In this paper we set out the design and delivery of a digital, text-based escape room designed to provide a virtual induction and help to build students' digital confidence. We begin by briefly explaining the reasoning behind our choice of game and platform and describing the staff-student partnership that delivered the project. We then describe the game itself, providing examples of some of the tasks, and showing how we embedded this in a large undergraduate class. We talk through our experiences of the process and present the results of the student evaluation and feedback. We end by reflecting on our experience and giving some practical suggestions for practitioners wishing to adapt this game for use in their own teaching.

The co-creation of a digital escape room designed to develop students' digital confidence.

Introduction

As a group of colleagues at the University of Glasgow with a shared interest in Game-Based Learning (GBL), we had been inspired by the application of the escape room concept (O'Brien and Farrow, 2020) in student learning, and were keen to explore this in the context of our students. We were therefore excited when the Adam Smith Business School (ASBS), where four of us worked at the time, announced a funded student internship initiative for the summer of 2021, providing us with an opportunity to develop an escape room in close collaboration with a student. We formed a project group with two academics from our team (Sarah and Matt O) acting as project sponsors, and the student intern as development lead and content developer (as keen believers in the power of staff-student partnerships, we wanted the student intern to lead this project). At an initial briefing meeting to scope the project we agreed that an escape room was achievable in the time available, and we gave the intern free rein to develop this.

The intern chose OneNote as the platform for the game because she appreciated how useful this tool had been in organising her work during her honours years and wished she had been introduced to it at the beginning of her university studies. The use of OneNote also made sense to us – because it was a centrally provided service, we were confident that it would be a stable platform, would comply with all privacy regulations, and staff and students would be able to access institutional IT support if needed.

We decided that we would design the escape room specifically for Matt O's level 1, undergraduate Management course (Principles of Management), and build in course-specific tasks. Our intern also decided to incorporate tasks that she had found useful in her freshers' orientation and adapt them for online use - as the course would take place during pandemic lockdown restrictions, she was particularly keen to try to replicate the on-campus experience where possible.

The Escape Room

As a first stage our intern spent some time looking at resources and brainstorming ideas for challenges, which she shared with the project team. Here are some of the ideas from this initial exercise (see Table 1 Overleaf).

Sarah Honeychurch and Matt Offord
University of Glasgow, UK

Using the map to answer a question
- Perhaps you are told that you have a class in a building and you have to figure out which subway station to get off at, based on what is closest
- This requires them to use the key in the map, use some judgement as to what is closest, and gives some idea of the layout of campus

Glasgow Uni themed crossword
- Crossword where the answers align to reveal the password to the next lock
- Clues will all be related to Glasgow University
- Some clues may require them to research the answers, but will ensure that all answers are relatively easily available upon a google search

Brainteaser
- Fourteen of the kids in the class are girls. Eight of the kids wear blue shirts. Two of the kids are neither girls or wear a blue shirt. If five of the kids are girls who wear blue shirts, how many kids are in the class? A.19
- This requires the students to use their problem solving skills and work together to find the answer

Belbin themed lock
- Think what could be a useful exercise here would be to provide the students with a summary of the Belbin team roles in their resource sheet
- Would then give them a profile of one or more character who fit into one of these roles
- They would have to match the character up to their team role, which would then be the password to the lock

Using the course Moodle to find an answer
- The answer to this lock will be contained within the course Moodle
- Thinking that the reading list would be a good place to put it, perhaps asking for the journal that an article on the reading list was published in
- Allows them to locate the reading list and familiarise themselves with it

An answer contained within Matt's welcome video
- As discussed, it would be good to have the students be required to watch Matt's course welcome video to obtain one of the solutions
- If Matt is redoing this for video for the academic year, perhaps he could provide the students with the answer verbally towards the end of the video, or could briefly hold up an item which would be the lock password

---

Table 1: Ideas for challenges

In the first challenge students were asked to navigate (virtually) from Glasgow city centre to the University of Glasgow's Gilmorehill campus (this was a common trip for anyone travelling by public transport to the campus and would likely be a journey that students would need to take offline). The James McCune Smith Learning Hub was given as the final destination point (see Figure 1 Overleaf).

Figure 1: Screenshot of Challenge 1

The second challenge introduced students to Belbin team roles, which is a model of group roles used to support group work in ASBS. In order to complete this challenge students were asked to read through descriptions of fictional team members and assign each member of the team to the most suitable role.

Sarah Honeychurch and Matt Offord
University of Glasgow, UK
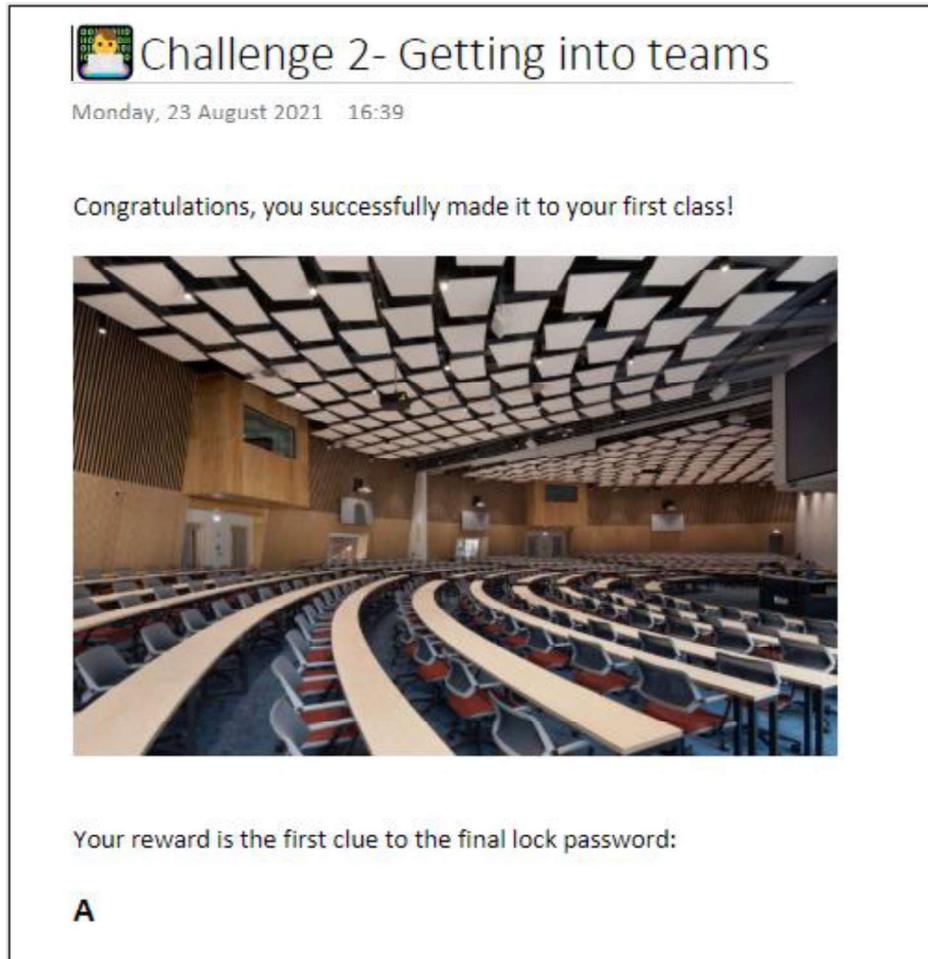
Figure 2: Screenshot of Challenge 2

In total there were eight challenges with each task relating either to the course or a familiarisation activity that a new first-year student could find useful. Each time a room was unlocked, players gained access to the next room and also received a letter, and the final challenge was to solve the puzzle of what these eight letters spelled out. Our intern also provided a full list of answers for staff (see Figure 3 Overleaf). You can also see a full version of the escape room if you are interested.

Sarah Honeychurch and Matt Offord
University of Glasgow, UK

Challenge	Question	Lock Solution	Final Lock Clue
1. Getting Around	Which subway station would you get off at to go your class at the James McCune learning hub?	Hillhead	n/a
2. Getting into teams	Match up each student to the Belbin team role which they are most suited to.	Adjective	a
3. Brainteaser	Fourteen of the kids in the class are girls. Eight of the kids wear blue shirts. Two of the kids are neither girls or wear a blue shirt. If five of the kids are girls who wear blue shirts, how many kids are in the class?	19	g
4. Crossword	Solve the crossword to reveal the next password	world changers	d
5. Welcome Video			e
6. Using Moodle	Which journal was the 2008 article by Van Vugt, Hogan, & Kaiser published in?	American Psychologist	t
7. Team development	Find the stage names from the word puzzle then match put them into the correct order to reveal the password	form storm norm perform	r
8. Communication Skills	Decipher the morse code message as a team	Active listening	a
9. Final lock	Use the letters you have been collecting throughout to solve the anagram. Fill in the blank: These challenges have been helping you to develop _____ skills.	graduate	u

Belbin Team Role	Student
Resource Investigator	Alex
Teamworker	Dylan
Co-ordinator	Joyce
Plant	Ellie
Monitor Evaluator	Chris
Specialist	Tom
Shaper	Izzy
Implementer	Victoria
Completer Finisher	Evan

Figure 3: Screenshot of table of answers

We embedded a link to the escape room into the course VLE (which had a section for games and social activities) and also made it a core activity by setting it as a group task in an early synchronous lecture, thus emphasising to all students how important an activity it was (See Figure 4).
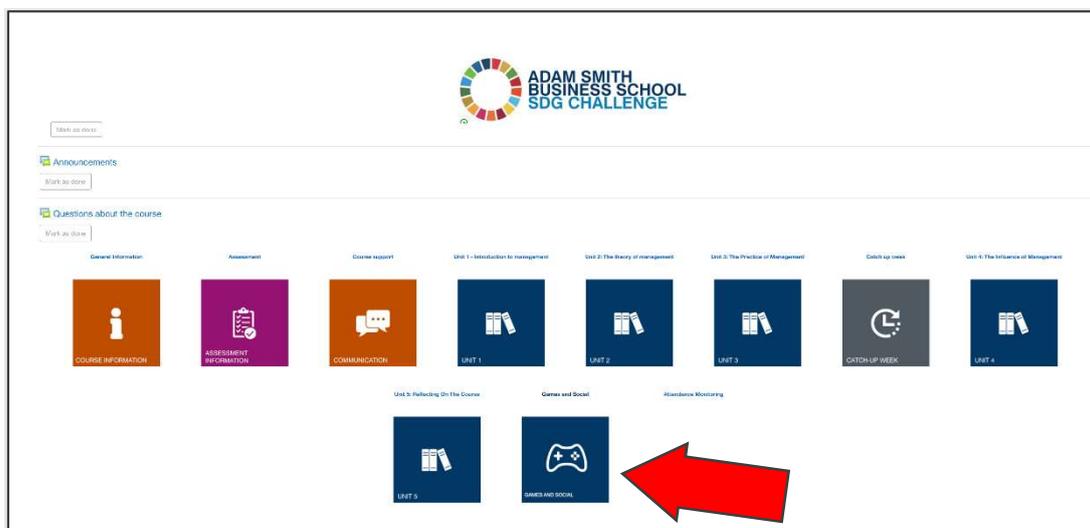

Figure 4: Screenshot of Moodle Course

Sarah Honeychurch and Matt Offord
University of Glasgow, UK

Because of institutional guidance during the pandemic, the lecture took place over Zoom. The 377 students attending were allocated to groups and assigned to breakout rooms. At this point in the semester very few students had signed into the course Teams channels, so students were given a link to the course Teams to access the game rather than a direct link to OneNote. This meant that they were also introduced to the Teams channels that they would be using for communication throughout the course.

Evaluation

We also set up an online survey in order to collect feedback from students at the end of the game. In total 87 students responded, and we set out the responses below.
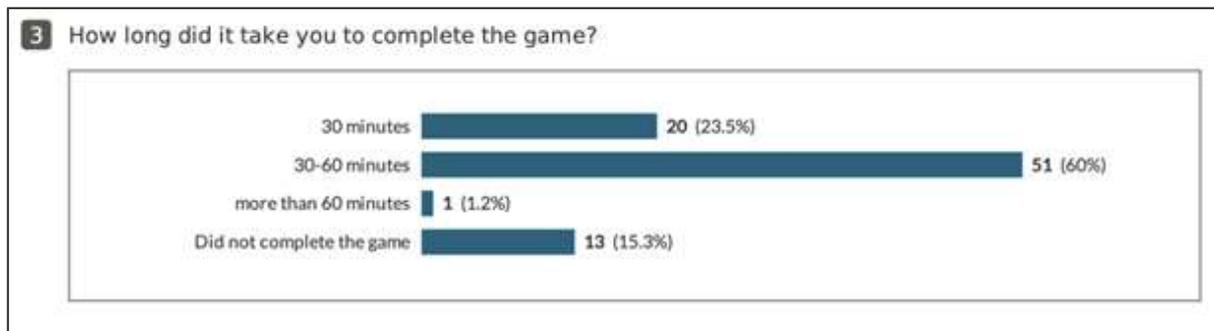
Figure 5: Responses to survey question – How long did it take you to complete the game?

Our intern had anticipated that the game would take about an hour to complete, and 61 respondents (83.5%) completed the game within this time.
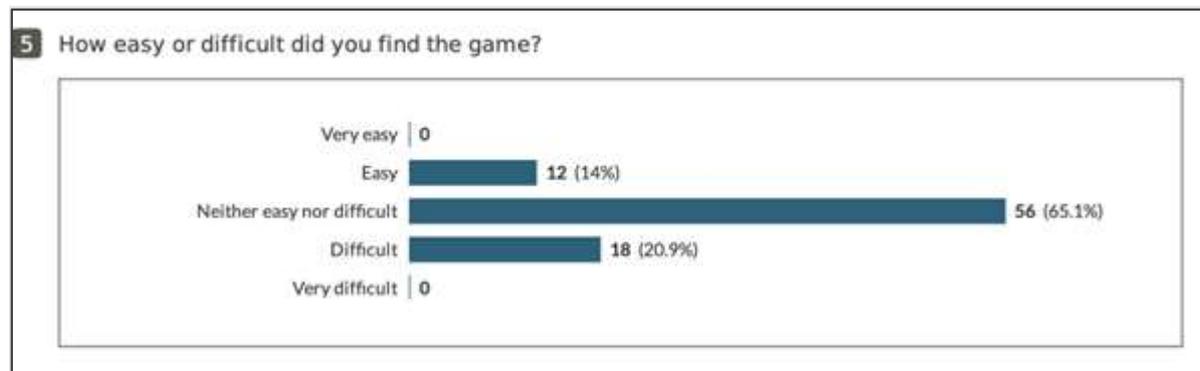
Figure 6: Responses to survey question – How easy or difficult did you find the game?

Close to two-thirds of students suggested that the game proved neither too difficult nor too easy, with a comparable proportion of students suggesting that the game was either easy (14%) or difficult (20.9%). This is a useful finding, given the challenge of designing a game that is well balanced. Game balance is a concept that designer Jesse Schell breaks down into a number of components, including the balance between challenge and success (2008, pp. 177-179). Recalling Csikszentmihalyi's theory of Flow (1991), Schell notes that successful games must offer a level of challenge that matches the player's skill, in order to avoid anxiety (where the challenge outstrips the player's ability) or boredom (where the challenge is insufficient to maintain the player's interest). The data here suggest that the design of the escape room game has achieved such a balance.
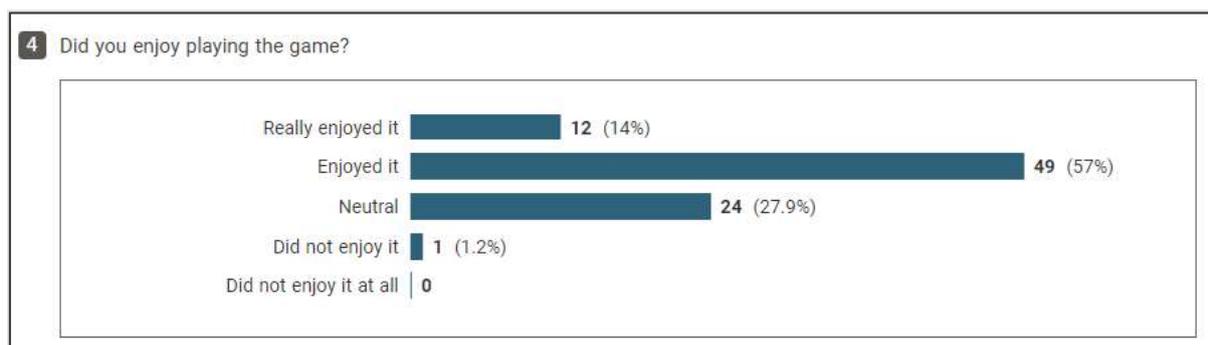
Sarah Honeychurch and Matt Offord
University of Glasgow, UK

Figure 7: Responses to survey question – Did you enjoy playing the game?

A significant majority (71%) of students reported that they enjoyed playing the game, with a little over a quarter (27.9%) remaining neutral. Only one student reported that they did not enjoy the game. Clearly, this is an important finding, as a successful educational game must be fun to play. As noted by Habgood (2009), this is often not the case, with educational games often resembling 'chocolate-covered broccoli' wherein the fun does little to disguise - or sweeten - the learning experience. Indeed, this a issue that has hindered many previous attempts at marrying entertainment and learning, with the venerable Seymour Papert observing that such "edutainment" tends to "result in offspring that keep the bad features of each parent and lose the good ones" (1998). In other words, games that aim to educate either succeed at being enjoyable to play, or at being educationally worthy – but not both.
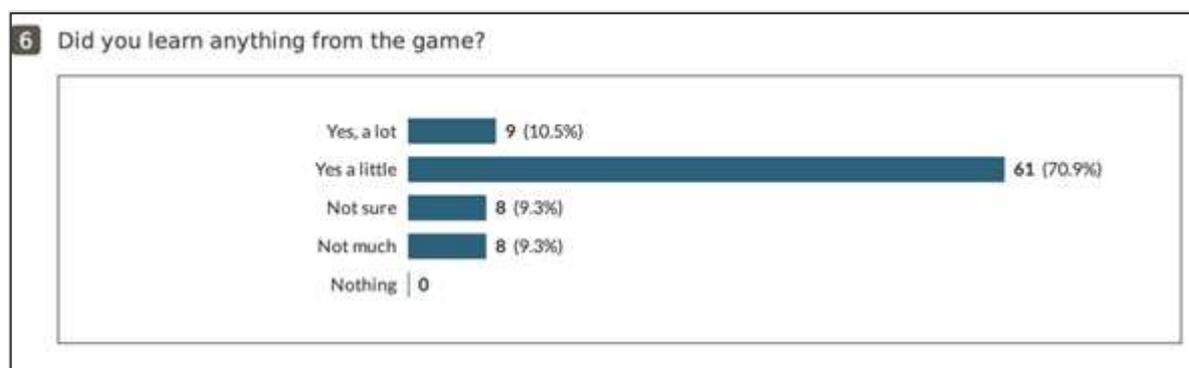
Figure 8: Responses to survey question – Did you learning anything from the game?

Taken in conjunction with the finding above, it is notable that a resounding majority (81.4%) of students reported that they had learned at least a little from playing the game. No students reported learning nothing. Thus, it appears that the escape room game described here has largely avoided falling into the trap of providing a fun experience at the expense of learning outcomes, or vice versa.

Each question also had space for open text responses so that respondents could explain their answers. We used an online word cloud generator in order to visualise the key words. As you can see, the words 'fun' and 'learn' occur in many of the responses, reinforcing our findings above (see Figure 9).

Sarah Honeychurch and Matt Offord
University of Glasgow, UK

Figure 9: Word cloud of key words from responses

Many respondents commented that the escape room made an interesting change from other lectures:

> "Was something different than a normal lecture when you just listen to someone"

> "It is an interesting and interactive different way to learn"

Others commented that they appreciated the opportunity to work as part of a group:

> "It was a good way to make the online lectures more worthwhile and to get some teamwork done with people from the same course as me"

However, one respondent was not as enthusiastic as their peers:

> "I'm not sure if I want to spend my time on playing a game instead of working for the actual class"

Reflection

Although the use of escape rooms in HE is not new, this was a learning experience for the project team, as we had not included them in our teaching before. While we are encouraged by the feedback, we feel that we could have positioned this activity earlier in the timetable. As can be seen from the feedback, while the escape room was successful on the whole, our version had been designed as an induction activity, and running this slightly earlier in the semester would have been preferable. This is something that we will keep in mind for future iterations.

Sarah Honeychurch and Matt Offord
University of Glasgow, UK

The escape room is a very simple idea, with a wealth of possibilities for use in HE learning and teaching. What made ours successful, in our opinion, was the student-led design. This ensured that the tasks included were written in student friendly language, and many of these were practical activities that our intern knew from her own experience to be relevant to new undergraduates at our university. However, we did not actually tell the students that this game had been designed by a former ASBS student. This is something that we should ensure that we convey to future students in order that they appreciate the potential relevance of the game to them.

Although our iteration of this game was successful, we would strongly recommend that anyone who implements this approach tests the finished escape room before implementing it in a live class as this will help to ensure that the game can be completed in the allotted time and also allow for troubleshooting of the sharing settings, if needed.

As we mentioned earlier, our choice of an Escape Room and OneNote was influenced by the fact that others in the SocMedHE community (O'Brien and Farrow, 2020), and knowing that we could reach out to friendly and experienced educators reassured us throughout the process. We are pleased that we are able to close the loop and reiterate how useful their earlier work has been to other educators.

Closing remarks

As we wrote above, this was a proof of concept for us a group - we are pleased with the results and we are already thinking about our next steps. Since the conference presentation (Honeychurch et al 2021), we have worked with colleagues in our School of Education, and they have used a modified version of our game in one of their courses. We also hope to design a version for use in a taught postgraduate course in ASBS in order to help students develop the research skills they will need for their dissertations and research projects. If you are interested in developing a version, and maybe in collaborating with us in some way, we would also love to hear from you.

Sarah Honeychurch and Matt Offord
University of Glasgow, UK

References

Csikszentmihalyi, M. (1991). Flow: The Psychology of Optimal Experience (Reprint). HarperPerennial.

Habgood, J. (2009). Wii don't do edutainment. Proceedings of Game-Based Learning 2009. March 2019. http://www.gamelearning.co.uk/share/Outnumb3r3d.pdf

Honeychurch, S., Offord, M., Quinn, N., Barr, M. and Mullen, H. (2021). The co-creation of a digital escape room designed to develop students' digital confidence. SocMedHe21 Cultivating mutually beneficial learning relationships using social media. University of Strathclyde

O' Brien, R. and Farrow, S. (2020). Escaping the inactive classroom: Escape Rooms for teaching technology. Journal of Social Media for Learning. Available at: https://openjournals.ljmu.ac.uk/index.php/JSML/article/view/395

Papert, S. (1993). The children's machine: Rethinking school in the age of the computer. Harvester Wheatsheaf.

Schell, J. (2008). The art of game design a book of lenses. Elsevier/Morgan Kaufmann.

Disclosure statement

No potential conflict of interest was reported by the authors.

Sarah Honeychurch and Matt Offord
University of Glasgow, UK