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Escaping the Norm: Games for Wider Participation with a Sense of Success. *A Practice Report*

Leigh Moore and **Narelle Campbell**
Flinders University (Flinders NT), Darwin, Australia

Abstract

This practice report describes how escape rooms have been used by one Australian university to successfully engage with high-school students who reside in areas of relative socio-educational disadvantage. We discuss how the escape room approach aligns with Lizzio's *Five Senses of Success* and offer recommendations for further use and evaluation.

***Keywords**:* Transition; widening participation; high school students; student engagement; Aboriginal and Torres Strait Islander.

Background

The Northern Territory (NT) of Australia comprises the highest proportion, 30%, of Aboriginal and Torres Strait Islander people of any state or territory in the country which, as a whole, has an estimated resident population proportion of 3.3% (Australian Institute of Health and Welfare [AIHW], 2015). Aboriginal and Torres Strait Islander people continue to experience widespread socioeconomic disadvantage and health inequality. Compounding this health issue in the NT is the high turnover and undersupply of the health workforce in rural and remote areas (Northern Territory Primary Health Network [NTPHN], 2018; Wakerman et al., 2019). To address this workforce maldistribution, research suggests that stakeholders should support the progression of local or rural origin students into study and careers in healthcare (Battye et al., 2019; O'Sullivan & Worley, 2020; Rourke, 2010; Walker et al., 2012). Students in the NT often come from less traditional university backgrounds as described by Kearney et al (2018) and attend schools of relative socio-educational disadvantage when categorised by the Index of Community Socio-Educational Advantage (ICSEA) (Australian Curriculum Assessment and Reporting Authority, 2011). Engagement with these students at high school, even prior to year 10 (Dale & Raciti, 2019) in stimulating activities may positively influence students to enrol in university (Mitchell & Zacharias, 2020).

Escape rooms are novel, time-limited games where teams of players are tasked to enter a simulated room setting and solve a series of puzzles in order to accomplish a specific goal or 'escape' by solving the final puzzle (Friedrich et al., 2018; Nicholson, 2015). Staff at Flinders NT in Darwin trialled an escape room strategy to encourage high school student visits to our campus in order to increase their engagement with the University. Flinders NT is part of Flinders University and operates from five sites across the Northern Territory, Australia. The aim of Flinders NT is to provide an innovative and accessible hub for education, research and workforce development that benefits each local community (Flinders University, n.d.). The impact of the escape room strategy was evaluated using Lizzio's *Five Senses of Success Framework* (Lizzio, 2006). While this framework

provides a summary of ideas and practices suggested to contribute to commencing university students' satisfaction, engagement and persistence, it is possible that using it to design engagement activities at an earlier, high school level may encourage students to consider studying at tertiary level.

Project

Physical format escape rooms were integrated into events or activities over a two-year period.

Stage 1 was an enterprise session for Year 10 students participating in the Foundation for Young Australians' IMPACT leadership program for Aboriginal and Torres Strait Islander school children (Foundation for Young Australians, n.d.). In groups of five to six students, they were challenged to complete a 15-minute escape room which was duplicated and set up in the clinical skills rooms. Rules of the game were given verbally, and the game scenario explained. On entering the room, participants solved a series of four puzzles in order to achieve the final goal which was accessing the first aid kit. After this introduction to escape rooms, the Year 10 students were tasked with researching and designing their own health-themed escape room, using a similar time frame and any of the props available or sourcing their own. They had access to Flinders NT study rooms, computers and internet and were provided assistance from the IMPACT staff.

Stage 2 involved integrating the 15-minute escape room designed by the IMPACT students, into campus visits and other engagement activities attended by other high-school students. This IMPACT escape room was portable and simple enough to be inexpensively duplicated and was also able to be transported by community engagement staff providing presentations in high schools. A session plan was written up by staff to accompany the escape room enabling any staff member to set up and run the activity. Participation in this room was used to initiate discussion about health care careers and to familiarise students with the Flinders NT staff and opportunities.

Stage 3 was an escape room competition. High schools were invited to enter teams of six students to design their own health-themed escape room. Teachers and students were given the opportunity to experience or view the IMPACT students' escape room to show an example of what was required. Teams were provided with a starter kit (Figure 1) and rules and instructions (see Figure 2) presented in a way that aligned with the gamification of the competition (e.g. starter kits were provided in cardboard boxes with hazard tape and marked 'secret'). Students were encouraged to use their own resourcefulness and seek assistance from other students with prop building. Over eight weeks at school, the teams designed their own escape rooms to be presented to the judges and other teams on competition day. The competition brought students back to the University regional campus and introduced students to health professional careers, health care students and university as a post-school option.

Figure 1

Starter Kit Contents for 2019 Escape Room Competition.

1. Instructions
2. An envelope marked CONFIDENTIAL containing the name of a health professional e.g. paramedic
3. Plastic specimen jar
4. Metal toolbox
5. Small gold lock with key
6. A word lock
7. A lockable cash box
8. Two small bottles of university-labelled promotional hand sanitiser gel
9. 'Because of Her We Can' (a booklet about Indigenous women working at Flinders NT)
10. A mini whiteboard
11. An inexpensive plastic analogue wall clock

Figure 2

Instructions Provided for Escape Room Competition.

Your mission: Design and build a portable 'escape room'

Rules

1. Your escape room must include **all items** from the competition starter kit. How you use them is up to you.
2. You will be randomly **assigned one healthcare profession** from the Flinders University list that you **must** include in your design. You could include it as a clue, puzzle, storyline, prop or however you like.
3. The 'room' should be designed so that most people who enter it could complete it in approximately **15 minutes**.
4. You are allowed to purchase items for your 'room' if desired but must **not spend over $100**.
5. 'Rooms' must be ready for judging on the **20th September** 2019 and teams able to set up their rooms at the Flinders NT campus in Darwin for that day**.**

Some hints

- Be resourceful: use recycled or borrowed materials, seek help from your manual arts or drama classes for sourcing props or your science teacher for special effects.
- The final puzzle solution does not have to involve exiting a doorway.
- Teams who do more with less money will be rated highly by judges!
- Consider the narrative you will use, whether to use 'hints', how you will engage people who enter, the variety and types of puzzles you wish to use.
- Do some research on escape rooms (on-line or visit Breakout NT) to get inspired.
- Have practice runs using your teachers or other students as participants to see what works, what doesn't, and to gather ideas on how you can improve on your design.
- On competition day, you will be required to run your room several times (for judges and other teams) so items in rooms should be sturdy enough to survive several uses.
- The judging in Darwin will take place in small meeting rooms so you will need to be able to transport your equipment and set up in these rooms.

Timeline

Now: Nominate your team via leigh.moore@flinders.edu.au
Start of term 3: starter kits provided (these will include some locks, items and your allocated health profession)
20th September: Competition Day!
(Competition day will include presentations by healthcare students and staff, networking, attempting other teams' rooms, lunch and awarding of prizes)

As well as sharing their escape rooms, teams participated in networking activities and presentations titled 'pitch my profession' by health care students from a variety of universities. See Table 1 for the 2019 competition day timetable.

Table 1

Timetable for Competition Day

Time	Activity
8.30 – 9.15	Schools set up their escape rooms at the University
9.15	Escape room judging Students rotate through other escape rooms
10:35 – 11:15	Morning tea **SmashChat:** speed networking with students and university staff
11:15 - noon	Students invited to try more escape rooms from other teams
12:00	Pack up rooms and grab lunch
12:30	**#pitchmyprofession:** brief presentations by university students studying health care (find out about ATAR, where they study, good bits and bad bits)
1:00	Presentation of awards
2pm	Finish

Results and Discussion

Approximately 50 IMPACT students from Years 10, 11 and 12 attended the campus of the Northern Territory Medical Program for Stage 1 in 2017. Twelve Year 10 students designed an escape room with an anaphylaxis theme that was both informative and engaging. The IMPACT escape room begins with the game master stating the rules and setting the scene:

> You are first year medical students and your supervisor is in a bad mood. Fabian, a teenager, is visiting his sick mum in hospital. His mum is in a coma. Your supervisor has asked you to wait with Fabian while the nurses work on his mum. You decide, while the supervisor is busy, to sneak to the canteen for a feed instead. When you return to the waiting room, you find Fabian unconscious and breathing strangely. You have 10 minutes before the supervisor returns to work out what is wrong with Fabian, find the correct medication, give it to him and save his life.

Participants then work in teams of six to solve a series of puzzles which allow them to eventually arrive at the adrenaline autoinjector necessary to save Fabian. The students designing the room were required to investigate signs, causes and treatment of anaphylaxis at a first aid level, and incorporate this into their room as well as manage props, puzzles, hints and timings. Their comfort in using the University facilities and delight they shared in demonstrating this room, to staff and students from Years 11 and 12, was obvious.

Over 100 students have participated in Stage 2 and experienced the IMPACT anaphylaxis escape room either at the University campus, or at their schools. Students came from a range of locations classified using the Modified Monash Model (MMM), including MMM 7, the most remote of locations. One school of distance education filmed four teachers participating and shared this audio-visual with their students.

The first year of Stage 3, the escape room competition, saw four teams (26 students) from three schools enter. The next year, there were eight teams (48 students) from seven schools.

These events have also indirectly engaged with a wider audience through a marketing and promotions strategy including local newspaper articles, Facebook posts, and school and University newsletters. Evaluation of Stage 3, via email or online surveys distributed to high school students, teachers and University staff, indicated enjoyment of the activity, engagement with the challenge and knowledge gained about health professions, escape room development and teamwork. Suggested areas for improvement were logistical in nature e.g. information not always effectively reaching students or students wishing they could try every single competitor entry.

For the competition, each team was allocated a health profession that had to be included in their entry in some way. This rule, along with presentations by undergraduate students on competition day, were designed to improve the visibility of allied health professions, one of the challenges rural people face in accessing university courses (Durey, McNamara, & Larson, 2003, Spiers & Harris, 2015, as cited in O'Sullivan & Worley, 2020)

The escape room competition may help develop student identity and familiarity with the university by appealing to their interest in games and addressing some of the student requirements for early success in university study as described in Lizzio's *Five Senses of Success Framework* (Lizzio, 2006).

Sense of Capability

Success in the competition did not depend on financial advantage and minimised traditional teacher-held power advantages. During the competition, students held the balance of power. Flinders NT staff and judges participated in the 'rooms' and were the ones without the knowledge. The students, through their own investigations and planning, held all the clues and answers required to 'escape':

> Judges ran through the rooms first – this was great! Confidence building for students and a great way to make competition fair… (Teacher 2018 competition).

> Another thing I liked about it was that we all did our own rooms and no teachers had helped in the making process... (Student 2019 competition).

Sense of Connectedness

Student teams were allocated to university rooms and facilities and encouraged to adapt these as needed to prepare their rooms for the competition. They were invited to use the student recreational areas over the competition day and to network less formally with university staff:

> … brought students (together) and allowed them to do something to relieve stress…the rooms provided were really good, as they were big and gave us students enough space to set things out ... it brought together other schools, so we got to meet different people and try out their rooms...(Student 2018 competition).

Sense of Purpose

Student teams were given the clear goal of developing an escape room to engage others. Individuals were required to contribute to the team in both designing their own or escaping another teams room. Participants were provided with interactive demonstrations of professions by undergraduate students. The high school students began to understand the importance of healthcare professionals:

> The range of occupations worked really well – students got to learn all about different professions... (Teacher 2018 competition).

Sense of Resourcefulness

Student teams had to research knowledge on a designated health profession and integrate this profession into their escape room. Participants had to learn to work within the constraints of:

- competition rules (including a minimal budget);
- school timetabling;
- team dynamics; and
- external commitments.

> This is a unique event which enables students to take full responsibility over an event chosen by them. They would have to have used a number of skills to complete their escape room, including brainstorming, problem solving, collaboration and organisation… (Teacher 2019 competition).

Sense of Academic Culture

Students were required to research a health care profession and escape rooms and combine this new knowledge into a final product. The escape rooms in this context are combined with an introduction to university functioning and expectations. The high school teams also learned about how university resources (e.g. virtual dissection table, clinical skills lab) assist university students in learning professional knowledge and skills.

Conclusion

The escape room in various forms is an effective way to engage local high school students and high schools, with the university and university students. With further evaluation and development, the competition could be used as a solid starting point for ongoing support through the years of study and into careers in areas of need. A longitudinal evaluation of student decision making after participating in any of the escape room activities would be valuable in directing future school engagement.

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