Short Report: Novel interprofessional learning for healthcare students: An escape room pilot

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Abstract

Introduction: Interprofessional practice is an important contributor to improved patient outcomes, yet interprofessional learning (IPL) has proven challenging to implement. With responsibility for a cohort of students from many universities and disciplines, attending placements of various lengths and dates, the Flinders Northern Territory Remote and Rural Interprofessional Placement Learning program needed a novel way to overcome barriers to IPL.

Innovation: An "escape room", an immersive team-based activity with puzzles and problem solving, was developed specifically for this program. The room has an interprofessional healthcare theme and can be transported in a suitcase to enable use in almost any placement site.

Evaluation: The room was run as a pilot in three stages – briefing, solving the room and debriefing. The pilot room was evaluated in multiple ways: observation of participants before, during and after the room; participant evaluation questionnaires; free-flow discussion after participation; and through written and verbal feedback received. A shortened version was presented to ANZAHPE conference attendees, with observers asked to provide feedback. The room was evaluated for participant engagement and perceived learning value.

Outcomes: The evaluation findings indicate that the escape room activity was very enjoyable, encouraged participant engagement, suited many professions, was transportable and showed promise as an interprofessional learning platform. Additionally, it provided unexpected benefits, including networking opportunities, staff engagement and peer support possibilities.

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What next? The next steps will focus on refining the learning objectives, developing the post-room debrief and exploring the escape room's use for formative assessment. In addition, we plan to replicate the room across our sites, develop an additional scenario and undertake ongoing evaluation of the room and associated student learning outcomes.

Keywords: interprofessional; education; student; health.

Introduction

Interprofessional practice is an important contributor to improved patient outcomes and quality health service provision (WHO, 2010). Interprofessional learning – learning about, from and with others (CAIPE, 1997) – is the critical precursor to effective interprofessional practice and has the potential to increase the quality of graduate outcomes. Interprofessional learning, however, has proved challenging to implement (O'Keefe, Henderson, & Chick, 2017). Flinders Northern Territory's Remote and Rural Interprofessional Placement Learning is a regional and remote-based university program that focuses on developing and supporting effective clinical placement learning in the Northern Territory. It aims to provide effective interprofessional learning during students' clinical placements as a strategy to promote graduates' commitment to interprofessional practice.

Annually, our program supports more than 500 students from 20 health professions and multiple universities to undertake clinical placements of varying start dates and lengths (from 1 week to a full academic year). These placements are situated in main towns through to very remote communities, all of which are classified as Australian Statistical Geography Standard Remoteness Areas (ASGS-RA) 3–5. This paper describes a pilot project that aimed to develop an interprofessional learning activity that is relevant and adaptable to our multi-professional student cohort, while also being intrinsically appealing and transportable across our sites.

A recent international entertainment phenomenon, "escape rooms" are immersive "team-based games where players discover clues, solve puzzles and accomplish tasks in one or more rooms in order to accomplish a specific goal … in a limited amount of time" (Nicholson, 2015, p. 1). Inspired by the team building and creative problem-solving appeal of escape rooms, our piloted program sought to determine their relevance as a cooperative interprofessional learning activity.

A scoping search of the literature revealed that research on escape room use in tertiary healthcare education is very limited. We found only four published and publicly available papers: two journal articles (Eukel, Frenzel, & Cernusca, 2017; Monaghan & Nicholson, 2017), one guest author entry on a university website (Teaford, 2017) and one abstract (Kinio, Dufresne, Brandys, & Jetty, 2017). All were North American and only one was interprofessional. Although small, quasi-experimental or descriptive in nature, describing heterogeneous participants and aims, the papers indicated positive learning outcomes (Eukel et al., 2017; Kinio et al., 2017), student appeal (Eukel et al., 2017; Kinio et al., 2017; Monaghan & Nicholson, 2017) and provided valuable

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suggestions on puzzle development and managing challenges (Eukel et al., 2017; Monaghan & Nicholson, 2017; Teaford, 2017).

Innovation

In late 2017, we commenced the design process to pilot an interprofessional escape room. The scenario was intentionally developed to showcase the Northern Territory's rural and remote context and required participants to assist aged-care residents during a cyclone and subsequent power blackout.

With a budget of $5000, we engaged a local escape room business to design the "room", including sourcing puzzles and props. The room comprised an inflatable mannequin, physical puzzles (e.g., locked boxes, infrared torches, electronically-controlled puzzles) and props (e.g., medication boxes, handwashing posters). The design brief included collaboration to ensure the room met our interprofessional learning requirements and that it was flexible and simple enough to deliver in multiple locations. For advertising and engagement purposes, we chose a room name, "Nana's Nightmare", which hinted at the scenario and the game content.

Following development and initial testing of the room, students, staff and stakeholders were invited to form teams to participate in a pilot. The pilot involved three stages – briefing, solving the room and debriefing. The briefing established ground rules to ensure a physically- and emotionally-safe experience and provided a detailed scene-setting narrative. Participants then entered the room as a team and were given a 60-minute time limit to solve a sequence of puzzles. Participants were communicated with via videoconference, which enabled them to ask for, or be given, assistance and allowed the facilitators to observe without unnecessary disruption. After completing the room, participants were invited into an evaluation debrief, which included a questionnaire and semi-structured discussion focused on the learning outcomes, value and interprofessional applicability of the room. Professional competency learning objectives were not developed for the pilot, however the debrief included exploration of specific interprofessional competencies and provided valuable insights from participants to guide future directions for these. Participants were also encouraged to discuss and reflect on their own contribution to the team, what they learnt about other professions and what characteristics affect team performance.

Evaluation

We evaluated the room in multiple ways: observation of participants before, during and after the room; participant evaluation questionnaires; free-flow discussion after participation; and through written and verbal feedback received. The focus of these evaluations was on the engagement of the participants, i.e., the fun element and the perceived learning value.

Thirty-four participants from a wide range of professions and experience (students, new graduates, experienced professionals) participated in the pilot. Team sizes ranged from four to seven participants. We ran the room nine times, eight in urban (ASGS-RA3)

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settings and once in a remote (ASGS-RA5) setting. Table 1 shows the characteristics of the 32 participants who completed written evaluations (94% response rate).

Table 1
Characteristics of Pilot Participants Who Provided Written Evaluation on the Room

Profession	Number participating in pilot	Location of participants (ASGS Remoteness area)
Audiologist	1	Urban (RA3)
Doctor	1	Urban (RA3)
Medical student	4	Urban (RA3) x1 Remote (RA5) x3
Nursing student	1	Remote (RA5)
Occupational therapist	2	Urban (RA3)
Occupational therapy student	2	Urban (RA3)
Physiotherapist	3	Urban (RA3)
Physiotherapy student	1	Urban (RA3)
Pharmacist	2	Urban (RA3)
Pharmacy student	2	Urban (RA3)
Speech pathologist	2	Urban (RA3)
Administrator	6	Urban (RA3)
IT staff	2	Urban (RA3)
Librarian	2	Urban (RA3)
Teaching support staff	1	Urban (RA3)
	32	**(4/32 Remote)**

In addition to the pilot runs, a shortened version of the room was presented at the Australian & New Zealand Association for Health Professional Educators (ANZAHPE) conference in 2018. After participation in, or observation of, the room, seven of the 30 educators, clinicians and administrators provided written feedback on the room's merit as an interprofessional educational activity for students.

Iterative adjustments were made to the room's flexibility and transportability based on participant experiences, including managing any puzzle failure or frailty. Additionally, the briefing, puzzle flow and hints offered to participants were tweaked during the pilot phase. Because the overall format and scenario did not change, evaluation data from each iteration was combined for the analysis.

The key organisational factors influencing our project were senior management support for both time and a budget to explore the escape room concept. While the initial start-up cost may seem expensive, we found it a worthwhile investment, as it included the consultant's expertise, ongoing support and the sourcing of the more elaborate puzzles,

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many of which can be repurposed for use in other scenarios. Equipment such as padlocks for simple puzzles were easy and cheap to purchase through hardware stores, while props such as empty pill bottles and dentures were donated or borrowed.

Outcomes

Participants rated the room highly in terms of their level of engagement and enjoyment. Thirty out of the 32 participants who completed the evaluation rated the escape room 8, 9, 10 or 10+, where 10 was "great fun" and 1 was "boring". They used phrases like "very exciting, every single moment was thrilling" (P26), and "It was mind blowing" (P31).

It was notable that after completing the room, participants were eager to discuss the puzzles, the solutions and their team's performance. After participating in the room, one group of allied health graduates (n = 7) were described by their course supervisor as "being on a real high".

Overall, the participants thought the game design was critical to engaging them. They appreciated having "a good range of puzzles to solve" (P14) and "how one thing led to another" (P21). The appeal appeared to lie particularly in the teamwork facilitated by the room. Participants described the escape room as a "fun and practical way to demonstrate the importance of working together and shows how different people attempt things and how this is useful" (P24) and liked that "it required teamwork and everyone coming up with ideas and trying them" (P29). Participants also noted the value of achieving a shared goal and that they enjoyed "working through the scenario and using each other's knowledge and putting it all together" (P30).

In addition to learning about teamwork, participants suggested that the room was well suited to teaching interprofessional skills, including communication and critical thinking skills. They suggested that the escape room could be used to learn about "how to communicate with different people effectively" (P31), "communication skills to share ideas" (P20), "how to listen carefully to what others say" (P11), "prioritising things" (P26) and "having to think about it – not in regular way" (P17).

Although participants readily identified the skills and health professional roles included in the room design, they strongly voiced that there was no need to focus on profession-specific clinical content as "we get enough of that through uni and our supervisors" (P18). Further supporting this notion was the observation that "[I liked that the room] did not favour any particular health backgrounds" (P11).

ANZAHPE attendees' suggestions for learning objectives mirrored the skills mentioned by pilot participants but with the addition of self-reflection. In addition, they encouraged consideration of an assessed component in the room, with the assumption that assessment "highlights the importance of the learning".

During the pilot, we observed personal characteristics of individuals that influenced the final room outcome. These included the effect of professional background or identity on puzzle solving, e.g., pharmacy students focusing on potential drug interactions, the assuming of leadership roles, individual preference for team or independent problem solving, different ways of managing emotions and, in the end, how participants shared

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victory or defeat. A well-designed debrief could provide a self-reflection opportunity, encouraging participants to consider how personalities, professional identities and approach to others in the team were associated with outcomes.

As we developed and implemented the room, unexpected benefits to students, staff and organisational reputation and mission became apparent. For placement students away from their usual supports, the room was an icebreaker, facilitating possible friendships and peer support. The room also became an unintended team-building and morale-boosting exercise amongst staff. Staff were curious about the project, volunteered to assist (e.g., design ideas, adapt puzzles, offer new scenarios, help run the pilot), were enthused by the opportunity to collaborate creatively and appreciated the team camaraderie and friendly rivalry.

Additionally, participant enthusiasm about their escape room experience resulted in several requests from external organisations to use our room for team building. Given our focus on interprofessional student learning, we were unable to meet these requests but instead referred them to a commercial escape room. However, this unsolicited interest and the reputational gains highlighted an area for future stakeholder engagement.

In parallel, based on our experience with placement students in the interprofessional learning escape room, our team also developed shorter and simpler rooms for the purpose of engaging high school students with the university. These rooms have fewer puzzles and can easily be solved in under 10 minutes.

What next?

We are confident of the merit of the escape room as an interprofessional learning activity for placement students. In particular, our focus is now on determining appropriate learning objectives, developing the post-room debrief and exploring the escape room's use for formative assessment. We aim to ensure that participants have an opportunity to reflect, share and connect on a deep rather than surface level with the room's learning outcomes.

In addition, we plan to replicate the room across our sites, develop an additional scenario and undertake ongoing evaluation of the room and associated student learning outcomes. Based on our experience and evaluation findings, we will maintain a focus on interprofessional skills rather than profession-specific clinical skills. A particular strength of the escape room is its engaging way of promoting learning and applying a wide range of skills that students often undervalue yet are critical to ensuring quality healthcare outcomes for patients.

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