

Using Escape Rooms to Promote Active Learning & Intraprofessional Collaboration: A Pilot Study

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BACKGROUND: Gamification has been shown to help increase students' motivation and facilitate positive learning outcomes. Prior studies suggest escape rooms help improve active learning, critical thinking, and teamwork and promote intraprofessional collaboration.

PURPOSE: This study examined an escape room's effectiveness as a teaching modality for occupational therapy students. We hypothesized that students' retained knowledge of course contents and perception of active learning, critical thinking, and intraprofessional collaboration skills would improve after participating in an escape room. Two escape room formats (in-person and online) were examined.

DESIGN: The study used a pre-experimental design.

METHOD: Participants: Participants comprised one group of Master of Occupational Therapy (MOT) and Occupational Therapy Assistant (OTA) students who enrolled in a clinical skills class during the study period. 31 students (23 MOT/8 OTA) participated. Most (87%) were female; the average age was 23.9 years old. Procedures: All students attended the weekly 2-hour didactic coursework together and could also attend an optional weekly 2-hour open lab. Students were randomized into groups with 2 to 3 MOT and 1 OTA student per group. Each group was then randomly assigned to an in-person or an online escape room during the mid-term of the course. The researcher-developed escape rooms comprised 3 clinical skills modules covered in the course: infection control, ambulation aids, and transfers. Each module had 3 designated puzzles. Students needed to work in groups and apply combined knowledge and critical thinking skills to solve each puzzle. All groups were instructed to begin with the first puzzle, giving them a clue for the next puzzle and so forth until all 9 puzzles were solved within 1-hour. Measurements: Participants completed the Readiness for Interprofessional Learning Scale (RIPLS), Self-Assessment Scale for Active Learning and Critical Thinking (SSACT) (Khoiriyah et al., 2015), and a researcher-developed Content Overview Assessment two weeks before and immediately after the escape room experience to evaluate their intraprofessional teamwork and collaboration, professional identity, activity learning, critical thinking skills, and knowledge retention. Data Analysis: Wilcoxon Signed Rank test and paired sample t-test were used to evaluate the difference between the pre-and post-test. Cohen's d effect size was calculated with the criteria that .20 = small, .50 = moderate, and .80 = large (Cohen, 1988). We also examined the differences between in-person and online escape room versions.

RESULTS: 17 and 14 students participated in the in-person and online escape room, respectively, with no differences between these two formats. Both formats significantly improved students' intraprofessional teamwork and collaboration ($Z = -3.14$, $p < .001$), positive professional identity ($Z = -1.90$, $p < .001$), activity learning ($Z = -4.01$, $p < .001$), and critical thinking skills ($Z = -3.37$, $p < .001$). Knowledge retention was also significantly improved ($t = -3.23$, $p = .001$). Pre- and post-test knowledge retention showed a moderate effect size ($d = .58$).

CONCLUSION: Escape rooms are an increasingly popular, innovative teaching modality in healthcare education. This study showed how escape rooms promote active learning, critical thinking, and intraprofessional collaboration among OT and OTA students. Participants were highly motivated and engaged in the learning process. The escape rooms also helped students retain learned knowledge.

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