



Break Out of the Classroom: The Use of Escape Rooms as an Alternative Learning Strategy for Surgical Education

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INTRODUCTION

- Active learning strategies in Canadian medical schools
- Passive spectator to active participant
- Has been shown to increase: enjoyment, information retention, faculty/student interactions¹⁻⁵.

Escape rooms: immersive games in which players are locked into a room and required to solve a series of riddles to escape within a set time limit.

OBJECTIVE

1. Implement a Vascular Escape Room.
2. Assess the impact of a Vascular Escape Room on medical student satisfaction, self-preparation and engagement in CanMEDS roles.

METHODS

- We designed an Escape Room based on Vascular Surgery clerkship objectives:
 - Peripheral arterial disease
 - Carotid stenosis
 - AAA
 - Acute limb ischemia
- Knowledge-based problems
- Technical skills: ultrasound, endovascular practice board, embolectomy
- Recruitment via an email sent to the University of Ottawa medical students
- 6 review articles provided as preparation material



DATA COLLECTION

- Direct observation
- Debriefing interview session
- Satisfaction survey
- Web-based survey

THE ROOM

- Simulation room at the University of Ottawa Skills and Simulation Centre
- Stations representing patients in the vascular surgery clinic
- Hidden objects and puzzles
- Teams of 3 or 4 participants had 1h to escape
- Participants could ask for hints

RESULTS

BASELINE CHARACTERISTICS

- 13 medical students forming 4 teams
 - 9 males, 4 females
 - 9 first year, 4 second year
- 1 had done a previous observership in vascular surgery
- 6 had previous experience in an Escape Room and they all found it enjoyable

DEBRIEF INTERVIEW

- Enjoyed practical exercises (3 teams)
- Would like to see Escape Rooms integrated in the medical curriculum (2 teams)

ONLINE SURVEY ON PREPARATION MATERIAL

- Average time spent preparing: 83.5 min (35-120 min)
- Average % of readings completed: 62.5% (41.7-100%)
- 2 participants used external resources as well


 100% would like to have more of this type of activity in the medical curriculum.

	1	2	3	4	5
Satisfaction					
Overall, I enjoyed this activity.	0%	0%	0%	0%	100%
This format was stressful.	0%	17%	25%	50%	8%
This format was an appropriate method for testing knowledge.	0%	0%	8%	58%	33%
Motivation					
This activity increased my interest in vascular surgery.	0%	0%	8%	50%	42%
I felt motivated to prepare for this activity.	0%	0%	17%	50%	33%
I read in other resources to prepare for this activity.	8%	25%	33%	25%	8%
Learning					
This activity increased my general knowledge in vascular surgery.	0%	0%	17%	42%	42%
This format assisted me in retaining course information.	0%	0%	25%	50%	25%
This activity helped me identify my weaknesses.	0%	0%	17%	33%	50%
CanMEDS					
This activity encouraged the use of communication skills.	0%	0%	0%	33%	67%
This activity encouraged the use of collaboration skills.	0%	8%	0%	17%	75%
This activity encouraged the use of leadership skills.	0%	0%	8%	33%	58%

Table 1. Results from satisfaction survey post-Escape Room, N=13.
 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree



OBSERVATIONAL DATA

- Successful escape: 3/4 teams
- Average time: 56.8 ± 3.87 min
- Average number of hints: 6.25 ± 2.75

Team strategy

Table 2: Individual vs collaborative

	Individual (n=2)	Collaborative (n=2)
Successful escape	1/2 teams	2/2 teams
Average time	60 min	53.6 ± 1.98 min

Table 3: Answering questions vs trial and error

	Answering questions (n=3)	Trial and error (n=1)
Successful escape	3/3 teams	0/1 teams
Average time	55.7 ± 3.95 min	60 min

CONCLUSION

By combining knowledge-based problems, technical skills, and CanMEDS roles into an Escape Room, we have developed a learning platform that is enjoyable and could provide an adjunct to traditional didactic lectures.

RESOURCES:

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 3. O'Brien R, Brocta R, Swigart S. Student perceptions of a Top 200 Medication Course utilizing active learning techniques. *Currents in Pharmacy Teaching & Learning* [serial online]. January 2013;5(1):49-53. Available from: Education Source, Ipswich, MA. Accessed November 9, 2016.
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