

Kevin Bertrand DO, Emily Macauley, MD, Michael Falgiani MD

Background

Gamification is the process of using traditional gaming applications and concepts to facilitate the learning process (1). The aims are to increase learning acquisition through the following concepts: making learning fun, increase motivation, having a reward based system, using competition, using technology, and having collaboration (2). The specialty of emergency medicine is leading the charge with gamification projects within residencies therefore we sought to create and implement a novel point of care ultrasound (POCUS) and board review gamification event (3).

Objective

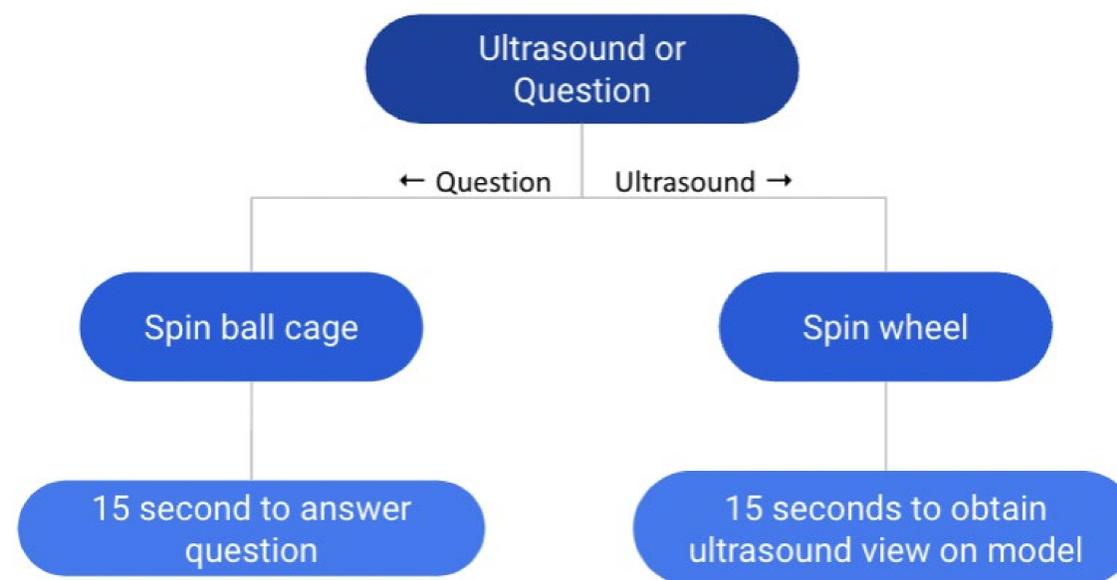
The purpose of this event was to review and increase POCUS knowledge, skill, and techniques in addition to providing a new format of board review. The game helps facilitate active learning of medical knowledge and retrieval of random ultrasound views in a rapid manner as is often needed in the clinical setting.

Curriculum Design

For this event the goal was to include physical activity, teamwork, and an element of timing to increase interest in the learning session. The residents were split in 3 even teams with equal members of each year.

The facilitator created a list of 30 point of care ultrasound views on note cards in addition to 60 board review procedural questions.. The resident would choose in “ultrasound or question.” If they chose question, they would spin a ball cage and choose the question card corresponding to the number ball obtained. They would have 15 seconds to answer. Their team could help answer for half a point or another team could steal.

If they chose ultrasound, they would spin a wheel to obtain a number which coincided with a note card. They had 15 seconds to find the view on the model starting from when the probe touched the model. If the resident was correct points were given to the team, if the resident was incorrect the facilitator would offer appropriate feedback and show the correct view. For this events, resident were competing for bragging rights. Residence were given source material for where all the ultrasound views and procedural questions could be found and studied.



Impact/Effectiveness

Residents clearly appeared to enjoy the competitive aspects of the game and provided feedback after the event that it was an enjoyable and effective refresher on POCUS technique. The competitive but supportive group environment was well received by the residents for board review with reported decreased anxiety regarding answering questions in front of a crowd. We believe that competitive nature of the event kept residents engaged and immediate feedback during the game improved knowledge retention.

For the next event we would like to measure the effectiveness with a pre and post test of POCUS knowledge. We would also like to incorporate a survey to measure resident satisfaction of POCUS gamification as opposed to traditional didactic presentations.

References

1. Gue Shayne, Ray Joseph and Ganti Latha. "Gamification of graduate medical education in an emergency medicine residency program". International Journal of Emergency Medicine 15.1 (30 Aug.2022): 1-7.
2. Krishnamurthy Kandamaran, Selvaraj Nikil, Gupta Palak, et al. "Benefits of gamification in medical education". Clinical Anatomy 35.6 (Sep.2022): 795-807.
3. Russell Frances M, Lobo Daniela, Herbert Audrey, et al. "Gamification of POCUS: Are Students Learning?". Western Journal of Emergency Medicine 24.2 (22 Feb.2023): 243-248.