

Using Gamification to Improve the Experience of Simulation

Dr Matthew Knight, Dr Susan Chatfield, Dr Alice Tipton

Aim

To Use gamification to improve initial student doctor experience and increase long-term enthusiasm for simulation-based education.

Background

- **Gamification**—using game design elements in non-game contexts [1]—can enhance simulation-based education (SBE) [2].
- The authors identified this as potentially a powerful tool to enhance existing courses in our **Montagu Clinical Simulation Centre, Mexborough**.
- This project evaluates its impact on **student doctors' first experience of SBE**, additionally aiming to **improve future engagement** and **reduce common anxieties** related to this teaching modality.

Methods

What did we do?

Course: 'The Crystalloid Maze' (novel 1-day gamified SBE).

Participants: 78 3rd-year student doctors (8 cohorts over 5 weeks).

Activity: 6 High-fidelity mannequin scenarios involving medical challenges completed in pairs to win crystals within a time limit. Total crystal score added to a leaderboard.

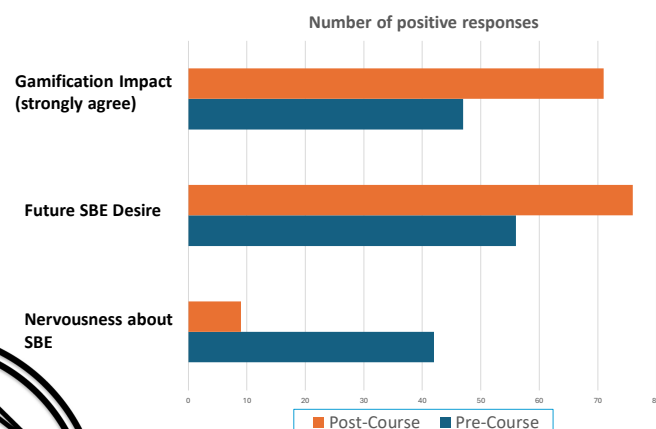
Analysis: Mixed-methods (qualitative/quantitative) via pre- and post-course surveys

What did it look like?



Results

- **Responses:** 77 pre-course; 78 post-course.
- **Novice Learners:** 64 (83.1%) were experiencing SBE for the first time.
- **Key Attitudinal Shifts:** Likert scale analysis (1–5) demonstrated a significant positive shift in student attitudes toward SBE:



Key Finding: More than **doubled** highest level of enthusiasm for future SBE (**29.9%** pre-course to **70.5%** post-course in strongly agree)

Recurring Themes:

leaderboard
enjoyable thoughtful
games different
relaxed fun teams
interactive
loved game crystals teamwork
gamification engaging
boxes scenarios funny
low-pressure
competitive

Conclusions

- **Anxiety Reduction:** The course substantially reduced student nervousness about simulation
- **Increased Buy-In:** Students became more enthusiastic about simulation-based learning
- **Gamification Validated:** The game-based format exceeded students' optimistic expectations
- **Psychological Safety:** Students felt much more comfortable and supported
- **Study Limitations:** lack of non-gamified control group

References

1. Deterding S, Khaled R, Nacke L, Dixon D. Gamification: toward a definition. CHI 2011. 2011:12–15
2. Krishnamurthy K, Selvaraj N, Gupta P, Cyriac B, Dhurairaj P, Abdullah A, Krishnapillai A, Lugova H, Haque M, Xie S, Ang E-T. Benefits of gamification in medical education. Clin Anat. 2022;35(6):795-807. doi:10.1002/ca.23916

