

Online Simulation Effectively Teaches Introductory Disaster Triage Skills

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INTRODUCTION

Practicing disaster triage teaches skills of rapid patient evaluation. Triage simulation with structured debriefing results in improved accuracy in pediatric residents and improved confidence in medical students, but is resource-intensive. Screen-based simulation of disaster triage improved triage accuracy in prehospital providers, and virtual reality (VR) simulation improved medical student triage skills. Few studies have evaluated online simulation to teach disaster triage skills to medical students.

OBJECTIVE

To create an online simulation to teach introductory disaster triage skills to senior medical students, as part of an elective in austere (wilderness, environmental, and disaster) medicine, using open source coding that any user can adapt for their own learners.

METHODS

Emergency Medicine faculty collaborated with the Center for Teaching and Learning, through a local Provost's grant.

EM faculty identified a need to teach disaster triage with limited teaching resources, approximating live simulation through low-fidelity online simulation, including the psychological experience of time-pressured triage of high-stakes mass-casualty cases, with limited resources and incomplete information. Faculty contributed content expertise, including 10 severe respiratory disease cases, each case requiring the learner to receive the patient from prehospital providers, assign an acuity level and ED location, as well as urgent management decisions. Educational technologists provided project management, pedagogical expertise, technical programming, and web hosting.

15 students asynchronously participated in the simulation and 1-hour group debrief during the austere medicine elective in May 2021. 9 additional students participated during a virtual elective in EM in October 2021.

All students were asked to complete a post-course survey regarding the learning utility of this simulation.

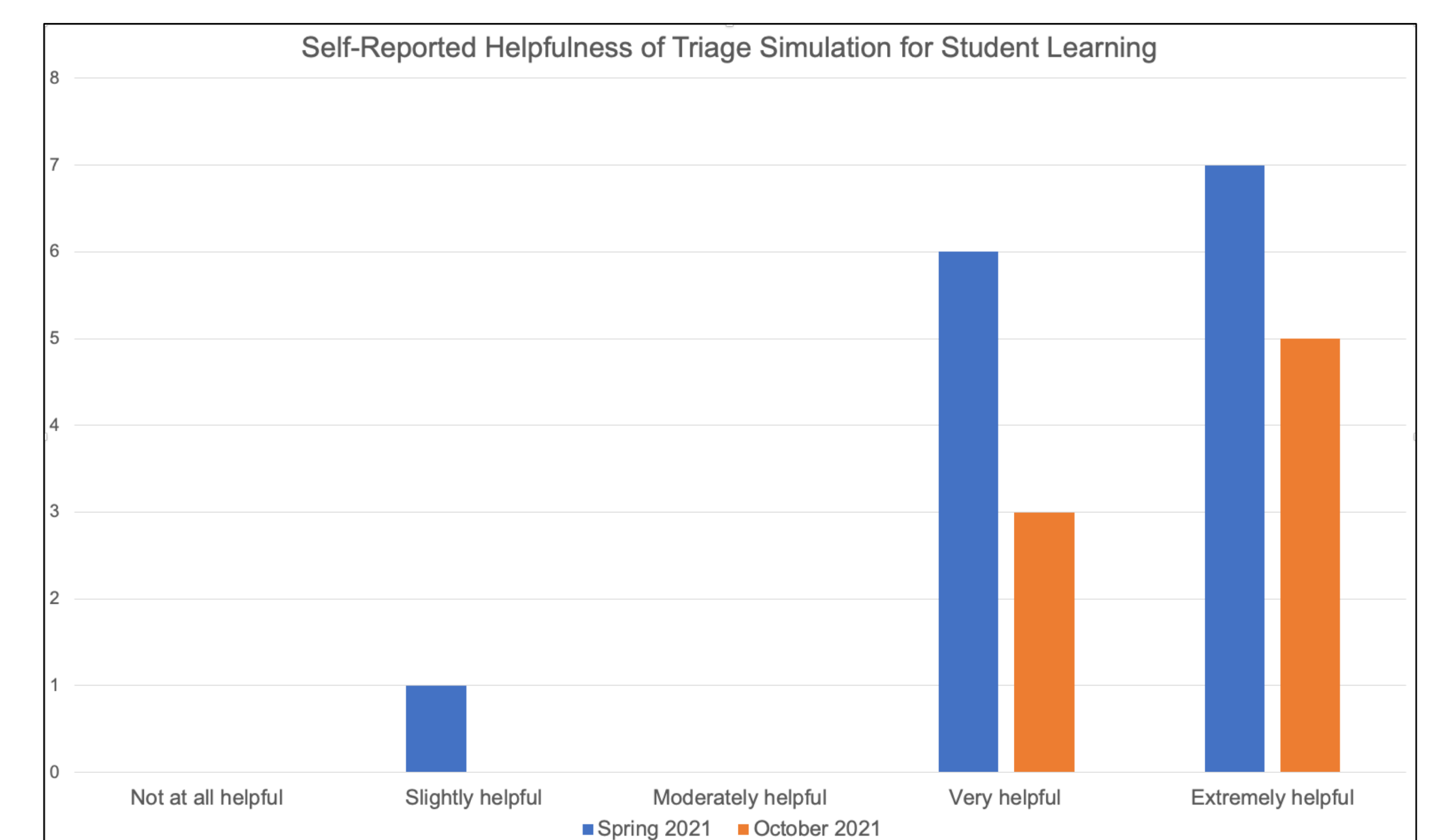
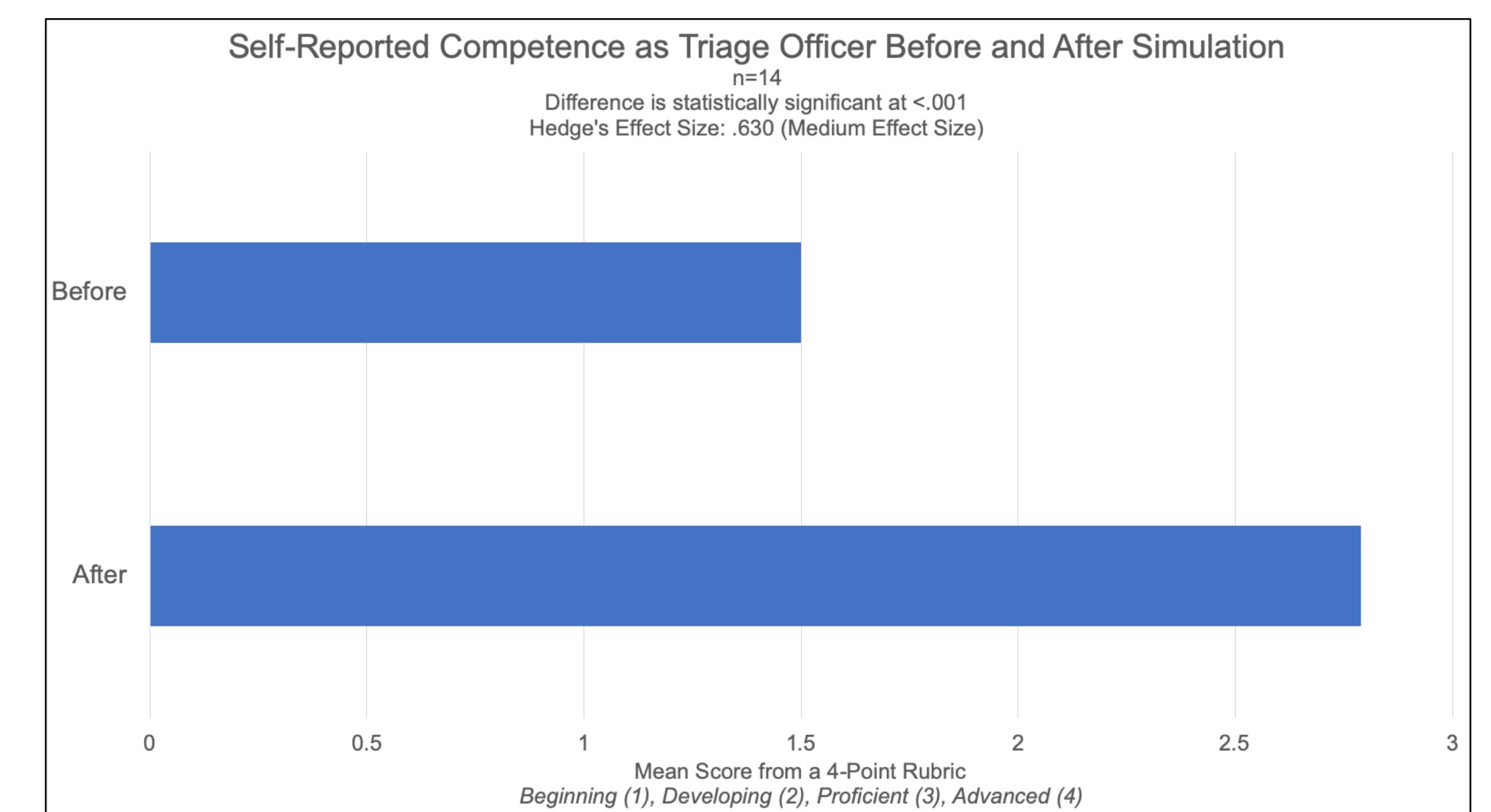
Disasters are rare.

But when they happen, we need to rapidly triage multiple patients.

How can simulation introduce learners to this skill?

Check out our free online sim – it's available for you to offer to your learners today.

RESULTS



DISCUSSION

Strengths:

- ❖ Overcomes resource limitations of live and VR simulation. Multiple learners can simultaneously experience the role of triage officer. Learners can engage asynchronously, from anywhere.
- ❖ Freely available for any learner to use today. Open source code allows anyone to develop their own adaptation, for any level of learner.

Limitations:

- ❖ May not be as effective as high fidelity *in situ* simulation.
- ❖ Participants need internet access. Optimized for desktop/laptop, not mobile devices.
- ❖ Debrief requires a facilitator skilled in disaster triage.

Next steps:

- ❖ Assessment of triage accuracy/speed, and comparability to live simulation/VR.
- ❖ Further development of the simulation, allowing learners to select their experience level, for simplified or complex cases, broadening the target learner groups to junior students, residents, fellows and attending physicians.

AUSTERMEDICINE Patient Triage Simulation Step 1. Introduction Step 2. Engage Step 3. Reflect Step 4. Summary About

Patient 3

You only have 1:00 for questioning before you commit to a final decision for Patient One.

0:07

Handoff

Chief Complaint

Vital Signs

EKG

FSBG

Pmhx

Brief Physical Exam

MOLST Form

30 y/o female with difficulty breathing x 5 days, using accessory muscles, sats 80s on the non-rebreather mask. Patient is 32 weeks pregnant.

Replay Audio

Assignments

ESI Level Assignment

1 2 3 4 5

Location Assignment

1/2 Trauma Beds Taken

2/5 High Acuity Beds Taken

Waiting Room ED, Low Acuity ED, High Acuity Trauma/Resus Bay

Airway Decision

1/3 Senior Physicians Who Can Intubate

No Oxygen Nasal Cannula High Flow Nasal Cannula BIPAP Intubate

Optional - Additional Intervention/Consultation

Anesthesia Cardiology OB Palliative Surgery

Submit

Link to online sim site:



Link to code:



Link to poster:

