



## Editorial 6(SI1): Simulation in higher education

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DOI: <https://doi.org/10.37074/jalt.2023.6.S1.1>

### Introduction

Welcome to the Journal of Applied Learning and Teaching's special issue on simulation in higher education!

The use of simulation-based education (SBE) in the education and training of various professional groups has expanded rapidly over the past 20 years (Eppich & Reedy, 2022). This is an expansion that has been driven by the recognition of SBE as a vital learning and teaching methodology. The methodology encompasses a wide range of modalities, from skills trainers and computerised manikins to the use of actors, virtual reality, and e-learning activities, to mention a few. This special issue captures a breadth of these SBE modalities and how they are employed across professions such as nursing, medicine, law, science, and teaching.

SBE is a continually evolving methodology. Its use can be traced back centuries when the military adopted it in various activities, such as jousting, and war games, such as chess, to develop battlefield skills (Bradley, 2006). Using healthcare simulation as an example, it has continued to evolve with the development of part-task trainers such as "Resusci-Anne®" (Laerdal Medical, Stavanger, Norway) in the early 20th century and progressing to the development of more sophisticated human patient simulators, which were computerised manikins capable of reproducing many human physiological responses (Decker et al., 2014; Harder, 2009). The evolution of SBE is further captured in this special issue with technologies such as gamification, virtual reality, and high-fidelity simulation.

### Overview of the issue

Many of the articles in this special issue are focused on healthcare. This is unsurprising in the post-COVID era, where health providers around the world remain stretched, and educators have had to develop more innovative ways to educate our healthcare professionals with a decreasing number of practice placements available (Bridge et al.,

2022). There is also an expectation from students that educationalists will engage a range of methods and tools for delivering information, for example, the increased use of gamification. The article by Shaik et al. highlights the MemoryTrail VR game, which helps students learn about brain anatomy and the nervous system.

VR is a feature in several other articles. Park et al. used VR to teach communication skills to preregistration nursing students; Grafton et al. used VR as part of an assessment tool to facilitate Objective Structured Clinical Examinations online when they could not be completed face to face due to the pandemic; and Pryor and Park used VR as part of a blended approach to teaching preregistration nurses about delirium. Other studies focused on immersive, interactive environments combined with flexible debriefing (see the contributions by Hill et al. and Mitchell et al.). Debriefing played a significant role in the simulation described by a second article by Mitchell et al., which addresses the very difficult topic of attempted suicide by ligature.

Boje et al. present a paper that represents a different but important aspect of simulation, detailing how a European collaborative developed and delivered an educational framework designed to prepare educators for the delivery of simulation-based learning strategies. The adequate preparation of the faculty delivering simulation-based learning is an essential element of using simulation successfully.

Moving away from nursing, Stirling et al. focus on medical education. High-fidelity simulation was used to create a ward environment to assess the capabilities of medical students to prioritise competing demands and work collaboratively within a simulated environment. Harper et al. investigate pedagogic approaches which promote collaboration and communication across multi-disciplinary undergraduate student groups, including nursing, medical, social care, and education students. Multi-disciplinary education in practice can be particularly challenging to facilitate, so the use of simulation, in this instance, is especially useful.

Outside of healthcare, the involvement of VR simulation continues to develop. Rababah gives a fascinating and effective application of this technology when teaching English language skills. The technology is also shown to be effective when used to generate laboratory simulations (Racey et al.). Racey et al. also involved the students as partners in the research. The paper highlights that although knowledge acquisition was the main purpose of the intervention, a key theme that emerged was that self-regulation of anxiety improved. Student involvement was also a key theme of the paper by Mulholland et al., which explored the role of students as pedagogic consultants. It highlights the challenges of this approach as well as the benefits it can bring to initial teacher education.

Other articles focused on teacher education. They include a contribution from Woodley et al., which used VR to develop classroom management skills for preservice teachers and the paper from McAllister and Harati, which shares an innovative use of an online decision-based simulation to help preservice teachers examine contentious issues, such as challenged books in elementary and middle school classrooms. The article by Fletcher explores the experience of law students in a moot court. He focuses on the use of high-fidelity simulation where courtroom scenarios were created.

There is an impressive breadth of disciplines that have contributed to the special issue from a wide range of countries, including the UK, USA, Denmark, Jordan, Singapore, and Australia. The research that has been undertaken in relation to simulation has also demonstrated a breadth of methodologies, including phenomenology, hermeneutics and studies involving mixed methods, demonstrating the value of both qualitative and quantitative research in this area. This special issue enables readers to consider simulation as an effective pedagogy that is being used internationally in a vast array of contexts. Going forward, it is essential that good quality research continues to underpin the use of simulation as a pedagogy in higher education.

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