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## WHEN I SAY

# When I say ... simulation

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## 1 | WHEN I SAY ... SIMULATION-BASED EDUCATION

'Can I borrow a manikin to do some sims with the students?' At face value, a simple request by an enthusiastic novice teacher. Whilst technology such as manikins can be powerful learning enablers, there is of course much more involved in making the learning opportunity transformative. In this article, we explain what simulation-based education (SBE) is and the important pedagogical 'ingredients' of this ubiquitous form of teaching. Moreover, we are keen to emphasise that whilst technology can be important in SBE, it should never compromise pedagogy.

Simulation is a method of experiential learning that has a long tradition in health professions education.<sup>1</sup> Compared to the naturalistic setting of work-based learning, in SBE, we create a learning reality. By designing scenarios based on clinical experience, and often with technological tools, we construct a learning opportunity. Working from the phenomenological premise that as embodied beings our understanding of the real world is based on our perception of reality,<sup>2</sup> in SBE, we aim to create a situation for learners that represents our perception of the reality of clinical practice, particularly regarding its inherent messiness and complexity. What this means in practice is creating a learning situation based on our experience of professional life so that students can understand our perception of that reality through their embodied learning experience.

Key to the success of SBE is what is commonly known as the 'suspension of disbelief' and what the doyen of modern actor training Konstantin Stanislavski called the 'sense of truth'.<sup>3</sup> Whether in a bespoke simulation centre or in situ simulation (i.e. a mocked-up simulation in the workplace, tethered to local contexts, cultures and spatial layout) or virtually through the medium of virtual reality (VR), learners

are afforded an immersive and multisensory experience. In simulation, it is important to provide an experience in which the simulation sufficiently reflects the real world (i.e. fidelity). Given the inherently resource-intensive nature of simulation, wise choices must be made about when best to use simulation compared to other forms of teaching. The 'zone of simulation'<sup>4</sup> is often best suited to complex high acuity competencies that have lower opportunities to learn from in the workplace (e.g. managing a cardiac arrest) or developing mastery in craft skills (e.g. laparoscopic skills) that can be practised safely on a simulator before the transition to real patient care. Moreover, challenging conversations with patients, and colleagues, can be a reality in healthcare. Working with simulated participants, often where the only technology could be two chairs, can help learners meet challenging conversations with confidence. It is important to consider this in a global context alongside the need for an equitable access to simulation technology especially in low- to middle-income countries. Regardless of the form of simulation, it must 'feel' real to the learner in order to have educational buy-in and make the ontological shift from 'pretending' to 'being' in order to deepen self-awareness.

Through supportive relationships with simulation facilitators, learners are brought out of their comfort zone and develop new knowledge.<sup>4</sup> Learners thereby expand their competencies in a supportive environment. More than just a cognitive (*thinking*) process, simulation is an embodied learning experience that harnesses the emotional (*feeling*) and behavioural (*doing*) aspects of learning. How often have we heard the phrases in simulation 'I had a gut feeling', 'it helped my muscle memory' or 'it felt not quite right'? Body pedagogics (learning as a physically embodied process) is an under-explored dimension in SBE.<sup>5</sup>

As learners are taken to, and often just beyond, the edge of their abilities in simulation, a range of intense emotions can be evoked.<sup>6</sup>

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Such emotions can enrich or hinder learning. Positive emotional states can promote learning by increasing motivation and the development of advanced problem-solving strategies. Negative emotions can, to a point, also promote learning (e.g. increased alertness and focus on the learning task). However, there is a delicate tipping point between enhancing and hampering learning and at worse causing psychological distress. Pekrun's control value theory of emotions suggests that enhancing emotions, which are linked to achievement activities and achievement outcomes, may be more conducive to learning.<sup>7</sup> Therefore, given that simulation is a constructed learning activity, educators have the agency to modify the conditions to optimise the balance between emotions, performance and learning. Emotions, and their impact on learning, is an important concept and is gaining much needed research focus in the evidence base.<sup>8</sup>

Whilst simulation is safe insofar as no patient is harmed, there is of course a risk of causing psychological distress in learners. Although SBE is commonly understood as a developmental method, nonetheless learners can often feel judged. Being observed by peers can create a sense of scrutiny and at worst a threat to learners' professional identity. One-way mirrors and CCTV cameras that are all too common in simulation centres can intensify this sense of scrutiny. Therefore, it is important that learners feel not just 'safe' but 'psychologically safe' (i.e. an interpersonal climate where individuals feel free to speak up about their ideas, errors or concerns, without fear of being humiliated). Such a 'psychologically safe container' underpins the important conditions that permit professional growth in simulation, particularly learning from failure.<sup>9</sup> This is no more pertinent than in the simulation debrief. A range of debriefing frameworks are on offer to assist educators in having guided dialogue with learners. As expounded by the theorist Bakhtin, dialogue occurs on multiple levels in a simulation debrief<sup>10</sup> not only with the learner and the debriefer but also dialogue with the learner's past and their future professional self and finding meaning from this dialogue. By facilitating learners to articulate their experiences, and through guided collective discussion and intellectual engagement, learners restructure and integrate their new knowledge into their existing knowledge. Importantly, the aim is to bridge this constructed knowledge with future clinical practice.

Simulation is a reflective pedagogy: By thinking, feeling and doing, learners are given a unique opportunity to *play* for real by engaging in high-fidelity performance. As Shakespeare suggests 'the purpose of playing' is to hold 'the mirror up to nature'.<sup>11</sup> Through the art of simulation, learners are afforded the opportunity for self-reflection, thereby awakening their critical consciousness and lines of action to agential self-improvement. The point is not mere imitation or fakery, but to make deep connections between the self and the world.

So, what do we mean when we say SBE? In our humble opinion, we mean that SBE is a constructed learning reality wherein educators create zones of development for learners to grow. Professional growth will flourish when psychological safety is supported to enable self-reflection. Educators must take a measured

approach to the lure of technology and ensure such tools do not overshadow pedagogy.

In response to our enthusiastic novice teacher, 'Of course you can borrow a manikin, you can also have a generous helping of pedagogy and place everything in a psychologically safe container. Perhaps you might not even need the manikin'.

## AUTHOR CONTRIBUTIONS

**Gerard J. Gormley:** Conceptualization; writing—original draft; writing—review and editing. **Paul Murphy:** Conceptualization; writing—review and editing.

## DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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