

## EDUCATIONAL DILEMMA OR QUESTION:

Do conceptions about knowledge and learning within the dominant culture of medicine affect the implementation and efficacy of simulation-based education (SBE)?

What epistemological beliefs about knowledge and learning do learners hold during SBE experiences?

### Reference

Ng, S. L., Kangasjarvi, E., Lorello, G. R., Nemoy, L. and Brydges, R. (2019), 'There shouldn't be anything wrong with not knowing': epistemologies in simulation. *Med Educ*, 53: 1049-1059. doi:10.1111/medu.13928  
<https://onlinelibrary.wiley.com/doi/full/10.1111/medu.13928>

### Why Is This Paper Relevant to Emergency Medicine Education?

This paper aims to describe some of the dominant beliefs held by learners about the nature of knowledge and learning in medicine. Furthermore, it examines the interplay between these personal beliefs and the dominant beliefs in medicine. A better understanding of this is essential for successful implementation of SBE.

### Level of Evidence

4-5

### Level of Learning

UGME

### Study Design

- A qualitative study involving secondary analysis of data obtained from a larger yet unpublished study.
- A theory-informed analysis of interviews with pre-clerkship medical students performed following their participation in an SBE training exercise.

### Funding Sources

Arrell Family Chair in Health Professions Teaching and the Professorship in Technology-Enabled Education.

### Setting

A large Canadian academic center.

### Synopsis

This study utilized data from a not yet published mixed methods study involving medical students who were interviewed following a SBE exercise involving auscultating cardiac murmurs. The focus of this study was a theory informed analysis of participants' conceptions of learning, and knowledge. Twenty-four students were interviewed. Interviews were coded using constructivist grounded theory methods and then reviewed in the context of Hofer and Pintrich's framework of learning and knowledge to further focus coding. Through analysis the following beliefs surfaced. Participants felt they learned when they were able to demonstrate or transfer a skill to another situation. Though they did describe building their own knowledge and saw value in self-guided or individual learning, overall, they equated knowing with concrete facts and skills and felt most affirmed when positive feedback came from an external source (instructor etc). Similarly, feedback was viewed as more about correctness than a formative process.

Participants so valued correctness, that it often lead to a fear of asking questions which might risk jeopardizing their impression with staff. Overall there was a dominant trend of believing knowledge was about correct concrete facts and learning was about external validation, rather than about discovery. The authors do however note there was a tension

### Synopsis (continued)

expressed beliefs on the above among participants. This may point to a complex interaction between personal beliefs about learning/knowledge and that of the dominant culture of medicine. The instructor was found to be a dominant force in setting this climate.

### **BOTTOM LINE**

The dominant medical culture and SBE are often misaligned. Medical culture idealizes, certainty and concrete truths while SBE requires experiential learning through trial and error. This may cause conflict between students' individual beliefs about learning and knowledge, and that of the dominant medical culture. Attending physicians and instructors have the ability to bridge this gap through role modeling and by setting a safe educational space.