A networked learning-informed investigation of introducing blended simulation based medical education in a UK National Health Service (NHS) context

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Abstract

Simulation Based Medical Education (SBME) has received a lot of attention in the past few years for providing medical students and practitioners near real-life opportunities to practice and improve their clinical and non-clinical skills (Issenberg & Scales, 2008) in a relatively risk-free environment, learn from their errors and encounter rare clinical events that they might not experience in an actual clinical environment. SBME has been introduced in medical context as a result of changes in providing health care services, reducing working hours for medical staff, ethical issues in using patients for educational purposes, and reducing unnecessary risks. These changes have resulted in limited patient contact for educational purposes. It has been predicted that SBME "in all its forms will be a vital part of building a safer healthcare system" (Department of Health, 2008, p.55) in near future. A networked learning (NL) approach to blended SBME has been introduced in an innovative NHS simulation centre (SC) in North West England in 2011. This new model replaces existing face-to-face briefing sessions with on-line resources. As per existing practices, following introductory briefings, students and facilitators will continue to engage in simulated clinical procedures and then collaboratively debrief their experiences. SBME attempts to create an authentic context with student-to-student, student-facilitator, and even student-simulated patient social interactions. Student-simulated patient social interactions are mediated by clinical staff 'speaking through' high fidelity mannequins, providing feedback on students' skills, communications and emotions. With the introduction of blended learning students will also have the option to participate in continued reflection in a NL environment. The focus of this on-going case study is to investigate the teaching and learning experiences, perceptions, and challenges that learners and facilitators may confront in the NL environment and provides the opportunity to focus "on the connections between learners, learners and tutors, and between learners and the resources they make use of in their learning" (Jones, et. al, p. 90). Blended SBME has been designed to provide students with flexible and collaborative learning opportunities to prepare themselves for the simulated scenarios, but results from a pilot study suggest this transition may prove challenging in terms of disrupting existing Trust teaching and learning cultures. As situated learning (Lave and Wenger, 1991) and experiential learning (Kolb, 1984) theories underpin SBME literature, both will be examined and critiqued in the NL context over the two-year course of this study.

Keywords

Simulated based medical education, reflection, blended learning, networked learning

Research Context

The research will take place in a NHS Simulation Centre (SC). The SC has two simulation labs and de-briefing rooms. The SC is equipped with high fidelity mannequins controlled by computers, experienced facilitators and clinicians. High fidelity mannequins authentically respond to students' clinical interventions via simulated physiological changes, e.g., changes in blood pressure, breathing etc. Digital audio-visual technologies enable time-stamped, facilitator-annotated recordings to be immediately available for student-student and tutor-student

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reflection following each simulation session. Currently the centre supports medical students, doctors, and other clinical practitioners. Participants in this study will be third year medical students, experiencing SBME for the first time, with experienced facilitators.

Aims and Objectives

This study investigates the teaching and learning experiences, perceptions, and challenges that learners and facilitators may confront in engaging blended SBME. This model introduces a networked learning component to SBME to support existing simulation and reflection practices. Blended learning can provide flexibility in learning that encourages student-centred and self-initiated learning (Khan, 2005). This study examines how a sample of undergraduate medical students and their tutors respond to the opportunity to participate in a networked learning environment. The study aims to investigate the following questions:

1 How is blended SBME perceived by Trust-based the learners and facilitators?
2 To what extent might blended SBME impact on Trust-based learners' and facilitators' learning and teaching experiences?
3 Which challenges to existing Trust-based teaching and learning culture might the introduction of blended SBME surface?

Design

The research design is a qualitative case study that investigates SBME "as a contemporary event" via an in-depth analysis "within its real-life context" (Yin, 2009, p.18). Data are being collected using multiple sources, including semi-structured interviews, observations, focus groups, and reviews of simulation facility artefacts, including interactions in the networked learning environment. A full-time site-based research associate post has been funded to support the project.

Preliminary findings

Prior to receiving funding, the research team conducted a Trust-funded five-month mixed methods pilot study. Analysis of pilot data has suggested the potential for existing Trust-based teaching and learning culture may be a challenge, current forms of online learning, are viewed differently by various stakeholders. Where executives, managers, and some clinical staff generally report optimistic views on use of technologies for educational purposes, fewer consensuses exist across a broader range clinical and non-clinical staff. Quality issues, with user friendliness and navigability, in existing online learning resources, have been reported by both clinical and non-clinical staff. While the pilot study did not investigate student views, given the broader context in which student participants experience the Trust's teaching and learning culture, residual effects may influence student perceptions. Further, broad dissemination of information on existing online resources has proved problematic to date. While at a concerted executive and managerial level efforts have been made to build a knowledge sharing culture, continuing efforts to ensure less restrictive and more reliable electronic access to resources are in progress. In the intervening months between submission of this abstract and the conference, additional preliminary findings will be analysed for inclusion in the poster.

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