ubiquitous, there are plenty to read and anyone can set one up for free, so they can be learnt without a virtual learning environment or even any support at all. Clickers, however, require at least purchase of software and physical equipment (and then its storage, classroom use and maintenance), and use alongside presentation software; one author in this book bought their own set.

Quibbles are minor. I found the combination of typeface, size and spacing a little hard on my eye, which affected the speed I could skim the text at, and I'm not keen on article titles in all-caps. A handful of articles could have done with some friendly editing for style, although that can be seen as interfering with the author's voice.

Overall, yes. You won't absorb it or use it all in one go (unless you want to take that as a challenge!). If you have a copy between colleagues, you still won't. And that makes it worth getting. If it encourages you to try something new, change what you are doing, evaluate in a different way, or develop a departmental collection of teaching ideas, then that alone will make it worth it.

## Simulation in Clinical Education: A Reflective and Critical Account

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**Introduction**

Simulation. A complex tool employed to immerse learners in a reality created specifically to elicit actions, behaviours and thought processes which can then be discussed with peers and reflected upon by the learner immediately and at leisure. This was my understanding of what simulation has to offer as an educational intervention. I viewed simulation through the lens of Honey and Mumford's (1986) experiential learning typology, seeing it satisfy all four learning styles - activist and reflector most obviously so, but theorist because of the observational element and pragmatist as the scenario unravels. It externalises what is often the internal parts of the cycle – reflection and abstract conceptualisation – through the debriefing process. I also believed that high fidelity environments offered the greatest return in terms of learning – being rather dismissive of lower fidelity tools. However, through active observation of simulation – both in a setting I am familiar with (mannequin based scenarios) and in one I am not (dental student lab-based simulation) – I am recognising that this view may be only a small aspect of what simulation has to offer and that fidelity is not everything.

**Factors influencing simulation's success – fidelity**

In order to achieve effectiveness I believed that a very high level of fidelity was required. That learner buy-in would be seriously compromised by environments and factors which did not obey the 'rules' of reality and that this would jeopardise the learning. This seems not to be the case. In their paper regarding fidelity and performance, Scerbo and Dawson (2007) highlight reasons why fidelity can impede learning in medical simulation, and Feinstein and Cannon (2002) detail many examples from the gaming literature – that higher fidelity not only fails to translate into more effective learning but it can actually hinder it by overstimulation. My belief of this was further questioned during my second simulation observation. The dental students were performing an array of clinical procedures using previously extracted human teeth set into a mould within a plastic replica head (the teeth were highest fidelity but the environment very low). The learning objectives clearly related to technical performance – for which the material (teeth) was high fidelity. It became clear from the conversations between learners and facilitators that learning was occurring despite the apparent low fidelity environment, and I wondered why this was. I suspect given Dieckman, Gaba and Rall's (2007) elucidation of how reality is perceived, the dental

simulation worked because on the physical level, the teeth were real, as were the instruments used – thus the procedure performed was real and in semantic terms the teeth were damaged and so the need for the procedure was real. This ultimately then satisfied the phenomenal aspect of reality perception because the task was relevant. The fact that the environment and rest of the 'patient' was very much removed from reality seemed irrelevant. Perhaps then this is the key. The semantic aspect of realism. Interpret and apply this correctly ie – make the task feel relevant to real life – and learning will occur in spite of deficiencies of physical realism. This is certainly one aspect of the success of simulation but clearly not the only one.

**Factors influencing success – the debrief**

Perhaps even more so than attention to the details of the scenario – particularly with reference to the comments above, I believe that the debrief is the key to simulation's effectiveness as a teaching tool. This belief is founded on personal experience and supported by the BEME Review by Issenberg et al (2005) which demonstrated that feedback was the most important educational feature of simulation-based teaching in medical education. This finding is unsurprising given that the debrief should be a facillitated reflection – both for the scenario candidate and those observing – and given Schon's (1983) work regarding reflection-on and reflection-in-action, the usefulness of this process cannot be overstated. The importance of conducting a debrief that is – at least in-part participant led was highlighted by the observations I made during the two mannequin based scenarios. The debriefs adhered very rigidly to the 'description, analysis application' model (Steinwachs 1992) which seemed useful as an opening approach, but became too inflexible when applied to the entire debrief – stifling at least one very astute point an observing learner made and preventing a more free flow of ideas and perceptions. Furthermore it led to repetition of points covered in the descriptive phase hence lingering here; to questions which were aimed at eliciting emotional responses to the scenario yet did not lead anywhere or deal with replies, and an overall impression of a rather scripted debrief that lacked focus. The non-technical skills discussion and video playback were an almost irrelevant addition to the discussion, eliciting a mixed reaction from the participants. In their article regarding debriefing Fanning and Gaba (2007) outline the levels of debriefing and clearly the amount of instructor input in the debriefs I witnessed demonstrated a very low level debrief. My initial reflection was that this must lead to poor learning, as debriefing – if viewed as a constructivist strategy – needs active involvement of learners to become an experience that can be reflected upon and contribute to their existing knowledge framework. Such low level debriefing must surely interfere with this process because of the increased instructor contribution, but this may not be the case for such junior candidates, as they may have little previous experience upon which to construct new knowledge. Therefore by acting as content experts and maintaining control over what is being taught, faculty adoption of an instructor – rather than facilitator role (Wilder 2009) may be the correct strategy for this group of learners. Indeed despite what I consider to be many shortcomings, the candidates – for the most part – seemed engaged and positive. Learning seemed to occur – albeit in a transmission style rather than through reflection. However Dieckmann, Gaba and Rall (2007) do observe the usefulness of debriefing the scenario from the participants perspective. In this way the scenario candidate will remain engaged during the unravelling of any incorrect decisions and will build a framework (Goffman 1974) for dealing with the assumed clinical problem as well as the actual one presented.

**Factors influencing success – social learning**

And speaking of frameworks, although correct action and decision making within simulation is usually met with positive comments by the faculty and so arguably displays elements of behaviorist learning theory, it is clear that simulation is a social endeavour and can be viewed more appropriately in terms of constructivist theory (Dreifuerst 2009) and particularly that of social constructivism. I had always assumed that the more knowledgeable other from Vygotsky's theory referred to the facilitator. From my observation of dental students this was not the case. Free to observe each other's

work and to collaborate, I witnessed one student assisting another with part of the tooth repair and the instructor approving the technique – a clear demonstration of a peer being the more knowledgeable other. Furthermore learning in the Zone of Proximal Development could be seen from the conversation between learner and instructor regarding removal of amalgam from the tooth. This is arguably no different from the debriefing of mannequin-based scenarios where associations are made between abstract knowledge and events in the scenario but the fact that it occurred during the simulation interested me because it seemed an externalised reflection–in–action.

Further to these aspects, the discussion by Dieckmann, Gaba and Rall (2007) of Goffman's primary frames, gives another viewpoint that could be considered constructivist. The student repairing a tooth demonstrates the primary frame (by performing the task alone) but the instructor modulates the frame using the discussion regarding a second layer of filler. The student appears to accept the modulation because the instructor makes this relevant to the frame and indeed to a real-life situation. The frame can be considered a construction of knowledge regarding the task, and strategies to defend that frame or knowledge construct go some way to explain error fixation.

**Conclusion**

From these experiences and literature considerations, I have begun to understand how limited my pedagogic thoughts were regarding simulation. Simulation still fits the tenets of experiential learning and reflective practice, but encompasses so much more – even (arguably) elements of behaviourist theory. I would now consider simulation to embody a Vygotskian classroom. It provides an immersive environment with principles of anchored instruction (the patient or part of the patient used) situated learning (meaningful and realistic context) and is clearly an exercise in constructivism. In conclusion it would seem that I am guilty of what Smallmann and St John (2005) refer to as 'naïve realism' in that I believed that successful learning from simulation occurred best in high fidelity environments and when the debrief was of the highest level. From my observation I can now see that fidelity is not as crucial as I supposed and that creating an environment that allows learning to flourish is of far greater worth.

**Annotated Bibliography of My Teaching Session**

Characteristics of Effective Clinical Teachers. Tamara L. Buchel, MD; Frederick D. Edwards, MD. Fam Med 2005;37(1):30-5. A survey looking at how Family Medicine faculty and residents ranked 15 listed teacher attributes. Clinical competency was ranked the highest by both residents and faculty although role modelling – ranked highly by faculty was ranked as unimportant by residents.

Teaching the Teachers. S. Lowry BMJ1993;306: 127-30. Boldly observes that the majority of teaching in medicine is performed by most NHS doctors who have received no formal training and this would not be tolerated in other educational circles and highlights the desire of medical practitioners for formal educational training, the barriers to it and some solutions.

Nursing students' perceptions of difficult or challenging clinical situations. Cooke, M. Journal of Advanced Nursing, 26(6), 1281-1287. 1996. A study using a self administered questionnaire of first year nursing students detailing aspects of practice considered challenging and teacher behaviours that best supported them.

Does Debriefing Help or Harm? D. Lovell-Hawker. This article looks at debriefing individuals following a traumatic incident but delivers some insights that translate to simulation debriefing – such as debriefer credibility

So Many Roads: Facilitated Debriefing in Healthcare. R. Key Dismukes PhD, David M Gaba, MD and Stephen K. Howard MD. Simulation in Healthcare 2006;1: 23-25. Refers to 'There's no such thing as a non-judgemental debriefing: a theory and method for debriefing with good judgement' byJ W Rudolph published in the same issue and gives a background of facilitated debriefing and comments on several points of the paper including the fact that instructors are rarely explicitely trained, that facilitators should act as

team leaders in assisting unravelling of how the team framed the challenges and the consequences and summarises that debriefers should undertake an in-depth conversation with their peers.

Editorial: Simulation-Saviour or Satan Advances in Health Sciences Education 8: 1–3, 2003. A commentary questioning the benefits of simulation in medical education when it is still a 'cottage Industry' championed by enthusiasts and questions whether more fidelity and time spent in simulators is beneficial – quoting studies that show difficulty in transferring skills from simulator to bedside

The Role of Debriefing in Simulation based Learning. Ruth M. Fanning, Mb, FFARCSI; and David M. Gaba, MD. Simulation in Healthcare Volume 2, Number 1, Spring 2007

A comprehensive and practical summary of debriefing including it's origins, process, different models and styles; it's structure and outcomes this paper addresses every aspect. It even raises the issues of use and usefulness of video playback and whether to debrief at all.

Teaching Skilful Teaching. Deborah Loewenberg Ball and Francesca M. Forzani. December 2010/January 2011 | Volume 68 | Number 4 The Effective Educator Pages 40-45. Outlines the unnaturalness of teaching in three domains (specialised expertise, the challenge of multiple perspectives and working with many learners) as well as other challenges a teacher faces and comments on the skillset required – comparing it to other professions

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## HE in FE – past, present and future

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Within the post-16 education sector the terms Further Education (FE) and Higher Education (HE) are widely used and understood. Historically, their *modi operandi* and student population have, to a greater extent, been quite different and have operated in discreet spheres with limited overlap. Traditionally the seat of higher learning, universities dominated the HE landscape with higher education being the preserve of the few, with less than 2% of 18-year olds going to university before the Second World War (Dyhouse, 2007). This figure contrasts starkly to provisional Higher Education Initial Participation Rate (HEIPR) for 2010/11 which indicated that the rate had leapt to 47% (BIS, 2012), clearly illustrating the extent to which the HE sector has expanded since