

Remote debriefing – a new paradigm for low resource and rural hospitals?

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INTRODUCTION

In Kenyan rural hospitals, junior doctors and anaesthetic clinical officers often face medical emergencies alone; scenarios that are typically complex and chaotic to manage prove even more daunting with an absence of senior support and feedback on their performance. Proficiency in accurately assessing one's own performance and learning to reflect on tasks performed are important skills in improving clinical practice and identifying system constraints.¹ But how can medical staff learn from feedback on performance when the opportunity for senior supervision is limited?

With assistance of the charity MEAK (Medical and Educational Aid to Kenya) I established a novel and innovative approach of review of a simulation in Nanyuki Hospital, Kenya, to provide feedback and guided reflection from senior clinicians (trained in giving feedback) in the UK using Skype®.

We have experienced a culture change in favour of reflective feedback and feel that remote debriefing of simulations will progress doctors' skills in managing complex situations.

METHOD

I organised a low-fidelity acute asthma simulation that was filmed using the hospital's laptop webcam. I have previously visited Nanyuki Hospital to help implement a trauma simulation course designed by emergency department doctors at Torbay Hospital, UK. I found the internet availability in Kenya to be good, even in rural areas.²

As the sample size of junior doctors available to participate was small, a qualitative method of data gathering through semi-structured interview transcript analysis was undertaken; traditional face-to-face ethnographic methodology was supplemented by digital ethnography. Advantages of digital ethnography include affordability, the ability to achieve global reach and the ability to map networks, which may aid future research.

Using the file hosting service Dropbox®, the video was uploaded in the hospital manager's office using a high-speed internet connection and was freely retrieved moments later on the other side of the world. The use of freemium voice-over IP service Skype® made expert advice from the UK available (Figures 1 and 2). A consultant anaesthetist specialising in medical education, a senior pharmacist, the Kenyan doctors and I watched the videos and the debrief began, focusing on non-technical skills. Formative feedback was used, focusing on encouraging reflection

This brief report describes the use of communication technology to allow distance learning between trainers in the UK and trainees in low- and middle-income countries. The advantages and disadvantages of this technique are discussed.

Key terms

- **Freemium** is a pricing strategy by which a product or service (typically a digital application such as software, media, games or web services) is provided free of charge, but money (premium) is charged for proprietary features, functionality or virtual goods.
- **Skype®** is an application that specialises in providing internet video chat and voice calls. Users can also exchange text and video messages, files and images, as well as create conference calls. It is based on a freemium model between users.
- **Dropbox®** is a freemium file hosting service that offers cloud storage, file synchronisation, personal cloud, and client software. Dropbox allows users to create a special folder on their computer devices, which Dropbox then synchronises so that it appears to be the same folder (with the same contents) regardless of which computer is used to view it. Files placed in this folder are also accessible via the Dropbox website and mobile apps.

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Figure 1. Two consultants conduct feedback to trainees in Kenya using Skype®

of human factors and discussing system restraints encountered. Formative assessment is that which modifies teaching and learning activities to improve student attainment, as opposed to summative assessment, which is an evaluative tool to look at learning outcomes, usually for the purpose of external accountability.

There are significant ethical issues surrounding the use of digital tools and data collection. Technological innovations and possibilities for new research outpace the creation of ethics guidelines. I utilised existing guidelines, updated by the Association of Internet Researchers.³

Comparative thematic analysis will be undertaken by the author; a method of constant comparison will be used, derived from grounded theory.⁴ Cross-referencing of triangulated qualitative data forms such as images, transcript and videography are to be undertaken until data saturation occurs, to ensure depth and rigour of thematic analysis.

RESULTS

Initial results demonstrate that the Kenyan junior doctors found facilitated self-review using video feedback to be motivating, worthwhile and not intimidating, particularly when partnered with



Figure 2. Further images of remote debriefing in practice

Scenario used for videoed simulation

- Welcome!
- The aim of this simulation is to rehearse a medical emergency that can occur in your hospital.
- This session is not designed to test your knowledge. It will be filmed so that you can watch it back and we will discuss what we see.
- Please treat SimMan as though he were a real person.
- Moses is an inpatient on the medical ward and he was admitted a few days ago with some tummy ache. He has a past medical history of a breathing problem.
- Suddenly today on the ward his breathing has become fast and noisy.
- Please treat this as if you were called to see this patient.
- There is a table of equipment available to you. If something you need is not there, we will pretend.
- If you wish to know observations, please assess Moses and your invigilator will tell you your findings.

benchmarking from consultant-experts proficient in giving formative feedback.

They appreciated positive comments on their quick diagnosis and management of the asthma patient. Both doctors acknowledged that in future they would delegate tasks and communicate their mental model with the team.

The most positive outcome occurred when they identified their own learning requirements and reflected on a solution, speculating on whether they ought to debrief their own teams after any particularly challenging incidents, in order to motivate each other and build tight teams with the nurses and clinical officers.



Word has spread to the next junior doctors due to start in Nanyuki and they are eager to do another simulation with feedback from the doctors in the UK. The experience was also well received by the UK members of the team, who are also keen to repeat the process.

CONCLUSION

Formative assessment using video review of clinical performance with appropriate expert feedback and benchmarking can be a useful tool to allow doctors to critically and accurately assess their skills, identify areas for improvement and cultivate proficiency in self-assessment.⁵ With some simple aid from our team to encourage reflective feedback, the junior doctors managed to complete Kolb's experiential learning cycle without ever having heard of the concept; critically assessing their video, realising there was a performance gap and conceiving new ideas on how to improve their clinical practice (Figure 3).

Although it is difficult to remedy that Nanyuki Hospital is resource poor, building on teamworking and system factors can be a free way of improving patient care within the hospital.

Debriefing teams from a different cultural and clinical background is educational for the trainers as much as it is for the trainees. Doctors' actions and decisions are guided by frames and 'heuristics'. A cognitive 'frame' is an internal image or mental model of external reality. Clinicians actively filter and make sense of clinical situations through these frames. Mistakes can then be seen to make sense in the context of the person's mental model.⁶ Recognising this allows the trainer to help find a helpful solution, rather than misdiagnose what the problem may be. Having to debrief a team in the context of their limited resources was a new challenge for us; it has changed

Box 1. Critical events included in debrief and discussion

- Describe what happened in the scenario.
- Who was leading?
- How did it feel doing the scenario?
- How did you feel watching yourself back?
- What went well?
- Describe what the other person did well.
- Is there anything you would do differently next time?
- What have you taken away from this?
- Do you think this will help you deal with real-life scenarios?

my own approach to debriefing and I now have a healthy scepticism regarding my own conclusions about doctors' performance in the context of complex environments. It has taught me that debriefing with the team and discussing mental models is vital in correctly matching teaching points to student requirement.

There is a human resource crisis in Kenyan rural hospitals, as doctors wish to work in tertiary centres for easier access to medical resources, continued medical education (CME) and increased opportunity for observation and feedback of skills by senior clinicians.⁷ Providing access to CME to build on teamworking and system factors may be a free way of retaining doctors rurally and improving patient care

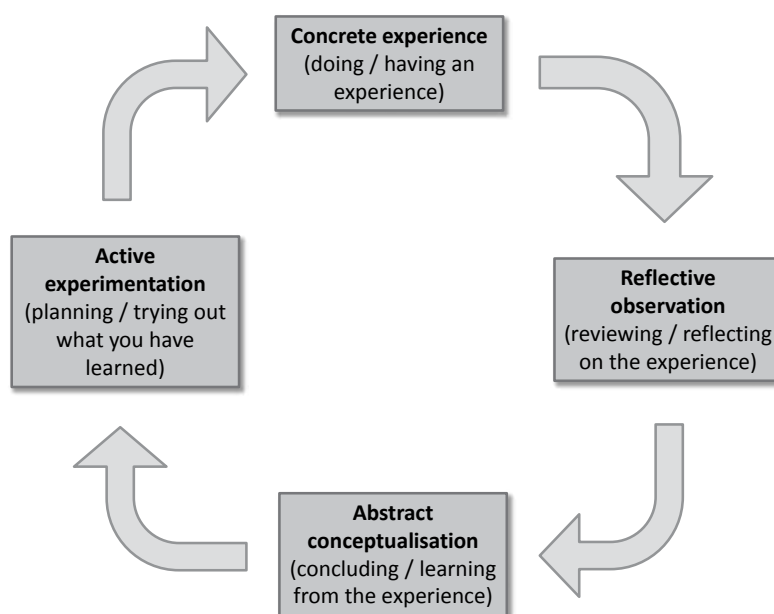


Figure 3. Kolb's experiential learning cycle

within the hospital. Remote debriefing could allow for internet-based distance learning with remote guidance from trained facilitators anywhere in the world, with participants performing a simulation with facilitated debriefing and reflection.

Increasingly there is consensus within the literature that high-frequency, low-intensity simulation sessions are more effective in long-term skill acquisition;⁸ remote debriefing may therefore translate into improved performance away from the simulation setting.⁹ With remote debriefing sessions continuing between our hospitals, I believe that in rural hospitals with limited resources in developing countries, low-cost simulation¹⁰ with remote feedback is a feasible approach to improve human factors and motivate junior doctors to improve their skills, shaping their professional identity. I am looking to expand this further with the local health authorities by facilitating Skype® sessions between Nanyuki and senior clinicians in Kenya's first and newly built simulation centre in Kijabe.

FURTHER READING

1. Purdie N, Hattie J and Douglas G. Student conceptions of learning and their use of self-regulated learning strategies: a cross-cultural comparison. *J Ed Psychol* 1996; **88**: 87–100.
2. Kim K, Kelly T and Raja S. *Building Broadband: Strategies and Policies for the Developing World*. Washington DC, World Bank; 2010.
3. Markham A and Buchanan E. *Ethical Decision-Making and Internet Research*. Available at: <http://aoir.org/reports/ethics2.pdf> (accessed 4 February 2015).
4. Charmaz K. Grounded theory. In: Smith JA (ed.) *Qualitative Psychology: A Practical Guide To Research Methods*. London: Sage pp. 81–110.
5. Hargie O, Dickson D, Tourish D. *Communication Skills for Effective Management*. Basingstoke, Palgrave Macmillan; 2004.
6. Rudolph J, Reamer D and Shapiro J. *Clinical Teacher* 2013; **10**: 186–9.
7. Government of Kenya, 2011. National Health Accounts, 2009/2010. Ministry of Medical Services and Ministry of Public Health and Sanitation.
8. Morris C. Facilitating learning in the workplace. *Br J Hosp Med* 2010; **71**: 48–50.
9. Sandi C and Pinelo-Nav MT. Stress and memory: behavioural effects and neurobiological mechanisms. *Neural Plasticity*, 2007, article ID 78970.
10. Stone L, Hellewell SA. Low cost simulation training in anaesthesia. *Update Anaesth* 2014; **29**: 44–6.