iViewExpert: Expert insights as a tool to support surgical skills training

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What problem was addressed?

Experts can find it difficult to explain what they are doing and why ('unconscious-competence') and teaching often relies upon concurrent or retrospective analysis of performance. The former can distract the expert from the task in hand, whilst the latter is subject to bias. Cued-recall debrief (CRD) – self-recording a technical task using a head-mounted camera then adding a facilitated debrief retrospectively - has been used to circumvent these issues in domains including firefighting and aviation training. The premise is that footage from an own point-of-view contains motion, auditory and visual cues, which stimulate memory, allowing the individual expert to undergo a high level of experiential immersion. This in turn facilitates recall of specific cognitive processes, or insights, which s/he may have been otherwise unable to access, which then form part of the debrief. CRD, in this study labelled iViewExpert, aims to enable insights into nuances of expert practice, to use for educational purposes (1).

What was tried?

We adapted this approach to in surgical education, to assess if iViewExpert could capture expert clinical decision-making and whether the resultant insights are educationally valuable to others. Colonoscopy was chosen as it fits the descriptors of appropriate CRD tasks: complex, time sensitive, high stakes, commonplace in practice (to maximise potential relevance to others) and is a short procedure (less than 30 minutes). After ethical permissions, patient and participant consents were obtained, ten volunteer experts (experienced consultant general surgeons) wore iViewExpert during a colonoscopy, and then added a debrief. They reported iViewExpert as: acceptable and feasible; a way of allowing a procedure to be explained in detail without time pressure or bias; the debrief as associated with a high level of experiential immersion; a way of explaining procedures in greater detail; and gaining new insights into their own performance. However, they did not

think these insights would be useful to learners. After removing any patient identifiers, we then sent a link containing the video plus debrief commentary to 12 consultants and 16 trainees/residents to review and give their views, via a short survey. Most stated that they learned something new that might change their practice. Learning points typically related to endoscope handling, technique conceptualisation and the use of terminology or a teaching framework. Many participants considered iViewExpert to address some of the challenges associated with standard training for the procedure (e.g., the difficulties of concurrent reporting and time pressures). However, some volunteers stated that they preferred hands-on experiential learning to an online video.

What was learned?

To our knowledge, this is the first report of using CRD/iViewExpert to capture insights into expert decision-making during a complex surgical task. The difference in opinion between the experts and the learners in respect of educational "usefulness" was of interest. This may represent a further automatic facet of expert performance; that experts are so removed from training, they have simply forgotten what might be useful to others. Further research is needed to explore this further.

491 words

Reference

1. Blackhall VI, Walker KG, Whiteley I*, et al* Use of head camera-cued recall and debrief to externalise expertise: a systematic review of literature from multiple fields of practice *BMJ Simulation and Technology Enhanced Learning* 2019;5:121-129.