

## Case Reports – Their Value in Training



*Evidence-based medicine. Level 1 evidence. Randomised control trials. The current generation of doctors has been brought up on a rich diet of expertly run trials, previously unavailable to prior cohorts of trainees in trauma and orthopaedic (T&O) surgery. Their value is undeniably high in everyday practice: we only need look as far as the number of patients recruited into the recent multicentre ProfHER and DRAFFT trials [1,2] and the rigorousness of follow-up and recording of Patient Reported Outcome Measures (PROMs) to see why we are starting to challenge our practice. However, when it comes to learning and education, the role of this evidence is limited.*

*Many medical schools, particularly in the United Kingdom, have moved towards a constructivist view in modeling their delivery of training. The underlying principle of constructivism is that learning is an active, rather than passive, process, and that teaching must support construction of understanding and behaviours, rather than simply being a transmission of knowledge, skills and attitudes. While 'evidence' is useful in this transfer of facts, it does not enhance deeper learning and understanding of principles, and has been shown to be ineffective in changing surgeons' behavior [3]. Instead, learning occurs experientially, in meaningful contexts via a variety of multimodal stimuli, and this experience will often outweigh the evidence in decision-making [4]. We rely on outcome bias for reinforcement of learning [5] and whether our last case had a positive or negative outcome will inevitably affect our treatment of the next case.*

*In clinical practice, learning is an inherently social activity, where we use both personal experience and vicarious knowledge gleaned from others to mould our practice through internal and external reinforcement of both our outcomes and processes [5]. Our knowledge evolves through shared language and understanding, attributing coherence to specific contexts. We form a cognitive apprenticeship with our teachers, where we observe expert practice; are trained through dialogue, and then do our best to imitate and articulate. Through reflection we attempt to improve, and finally develop independent thought processes from tackling real problems [6]. In the constructionist model, this learning takes place via a case-based/problem-based approach, where real-life cases are used as a stimulus for learning. Herein lies the true value of case reports, with their intimate relationship between authentic problems and valuable, contextualised, learning points providing a framework for training.*

*Case-based discussions (CBDs) now form an integral cornerstone of training and formative assessment in T&O postgraduate programmes in the UK via the Intercollegiate Surgical Curriculum Programme (ISCP). This assessment is not for the purpose of testing knowledge, rather it is intended to assess the application of knowledge, judgement and decision-making (i.e. 'higher order' thinking) through the medium of dialogue between trainer and trainee, and has been shown to have both predictive validity with certification and convergent validity with other measures [7,8].*

*However, the most significant key in driving learning is feedback: whether internal (reflective, self-evaluation) or external (outcomes, trainers), it is "the most powerful single moderator that enhances achievement" [9]. We must always be wary of quoting evidence, but also that a single case report is exactly that – a single patient. An expert will draw on both of these forms of evidence, analysing the information available from theory, heuristics and pattern recognition from experience to comprehend a given situation, project future states, and reassess based on feedback, to provide the best treatment for each individual patient [4, 10, 11].*

## Conclusion

*Questioning our current practice is vital to providing the best patient care in the future of our specialty, but in education is where we can really reap the benefits of case reports above other forms of evidence as part of our constructionist, reflective learning process.*

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