



Simulation and education

Use of the learning conversation improves instructor confidence in life support training: An open randomised controlled cross-over trial comparing teaching feedback mechanisms[☆]



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ABSTRACT

Aims: Feedback is vital for the effective delivery of skills-based education. We sought to compare the sandwich technique and learning conversation structured methods of feedback delivery in competency-based basic life support (BLS) training.

Methods: Open randomised crossover study undertaken between October 2014 and March 2015 at the University of Birmingham, United Kingdom. Six-hundred and forty healthcare students undertaking a European Resuscitation Council (ERC) BLS course were enrolled, each of whom was randomised to receive teaching using either the sandwich technique or the learning conversation. Fifty-eight instructors were randomised to initially teach using either the learning conversation or sandwich technique, prior to crossing-over and teaching with the alternative technique after a pre-defined time period. Outcome measures included skill acquisition as measured by an end-of-course competency assessment, instructors' perception of teaching with each feedback technique and candidates' perception of the feedback they were provided with.

Results: Scores assigned to use of the learning conversation by instructors were significantly more favourable than for the sandwich technique across all but two assessed domains relating to instructor perception of the feedback technique, including all skills-based domains. No difference was seen in either assessment pass rates (80.9% sandwich technique vs. 77.2% learning conversation; OR 1.2, 95% CI 0.85–1.84; $p = 0.29$) or any domain relating to candidates' perception of their teaching technique.

Conclusions & relevance: This is the first direct comparison of two feedback techniques in clinical medical education using both quantitative and qualitative methodology. The learning conversation is preferred by instructors providing competency-based life support training and is perceived to favour skills acquisition.

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Background and study rationale

Out-of-hospital cardiac arrest (OHCA) is associated with poor survival and, in those for whom return of spontaneous circulation is achieved, significant morbidity.^{1–3} As has recently been highlighted by a number of large consortia studies, outcomes may nevertheless be improved through use of the chain of survival, which includes

the delivery of prompt and effective cardiopulmonary resuscitation (CPR).⁴ Despite this, there exists evidence to indicate that delivery of CPR is sub-optimal in both pre-hospital and in-hospital settings.^{5,6}

The quality of CPR delivered by rescuers may be improved by enhancing the training process. The provision of feedback to candidates undertaking simulation based Basic Life Support (BLS) training is one area which may influence rescuers' quality of CPR by improving both skill acquisition and skill retention.⁷ This feedback is traditionally provided concurrently during BLS training, though pre-training feedback has recently been identified to be of benefit within a cohort of medical students.^{8,9}

A number of structured processes have been reported on within education literature to support the effective delivery of feedback to learners.^{10–12} There is however little consensus amongst

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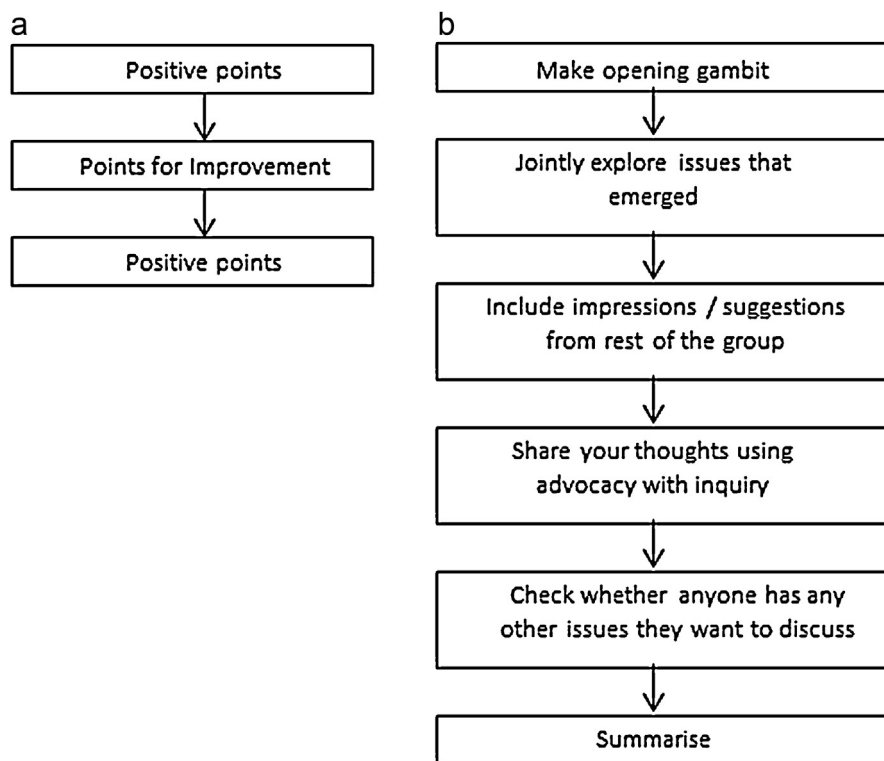


Fig. 1. An overview of the structured processes underpinning feedback delivery using the sandwich technique (a) and the learning conversation (b).

resuscitation bodies as to which feedback mechanism is most effective for life support education. The European Resuscitation Council (ERC) previously recommended that candidates completing BLS training were provided with interpersonal feedback using the 'sandwich technique' but now advocates an adapted 'learning conversation' approach.¹³ This provides a structured three-step approach to delivering a critique of a candidate's performance. Instructors adopting this approach must interpose criticism, or a point for improvement, between two positive statements of praise, as identified in Fig. 1a.

An alternative approach for the delivery of feedback is the 'Learning Conversation'. This is advocated by both the ERC and Resuscitation Council UK (RCUK) for training in BLS and Advanced Life Support (ALS), respectively.^{13,14} In contrast to the sandwich technique, the learning conversation focusses on the perspective of the learner rather than their teacher. As is demonstrated in Fig. 1b, the learner is prompted to voice their own view of their performance with instructors then validating their ideas to permit the learner to focus on areas they were most concerned about.

There has been individual subjective criticism of both the sandwich technique and the learning conversation from a sociological perspective.^{15–17} However, there has been no direct comparison of the relative impact of variant feedback techniques on skills performance or the confidence of either trainees or those instructing them. Resuscitation councils must therefore attempt to design skills-based education programmes in the absence of a relevant evidence base for the mechanism through which feedback is to be delivered, despite its known importance to short and long term knowledge retention.

Objectives

We sought to directly compare whether use of the learning conversation feedback mechanism permitted greater attainment of competencies than the sandwich technique feedback

mechanism amongst healthcare students undertaking skill-based basic life support (BLS) training. We additionally analysed the comparative impact of feedback delivered using the sandwich technique or learning conversation on the confidence of trainees undertaking BLS training and those instructing them.

Methods

Study design, setting and subject protection

This open randomised controlled crossover trial was undertaken within the University of Birmingham, UK, between October 2014 and March 2015. All participants provided written informed consent and were free to withdraw from the study at any time. Ethical approval was obtained from the University of Birmingham Science, Technology, Engineering, and Mathematics ethical review committee prior to the start of recruitment following protocol review (ERN-14-0979). There was no deviation from the proposed study methodology and protocol following trial commencement.

The University of Birmingham has for almost 20 years operated a unique peer-led BLS course that has been described previously and which each year provides ERC-accredited BLS training to over 600 first-year undergraduate and graduate students studying medicine, physiotherapy, dentistry, nursing and pharmacy.¹⁸ Each candidate receives in excess of 12 h face to face tuition at maximal instructor:student ratio of 1:3 and four courses are delivered over each academic year. Tuition is provided by senior healthcare students who are trained as ERC BLS instructors and who undergo additional in-house training, as has recently been described.¹⁹ All prospective BLS providers must pass a formative competency based practical skills assessment undertaken by a trained ERC BLS assessor in order to complete the course. Internal audit of teaching and assessment quality is routinely undertaken and inter-assessor variability is low, as previously described.²⁰

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