Active blended learning for clinical skills acquisition: innovation to meet professional expectations

Abstract

The standards for pre-registration midwifery education state that the practice-theory ratio of the programme should be no less than 50% practice and no less than 40% theory, adopting a variety of learning and teaching strategies, including simulation. Simulation for skills teaching has been found to bridge gaps between theory and practice, and to positively affect how prepared and confident the student midwife feels to apply knowledge and skills in the practice setting. With changes in regulation under consultation, and an ever more complex clinical environment, it is timely to revisit learning, teaching and assessment strategies in pre-registration education to ensure that they are fit for purpose.

The University of Northampton's approach to learning and teaching, termed active blended learning, is a student-centred approach to support the development of subject knowledge and understanding, independent learning, and digital fluency. This involved the modification of a traditional, four-stage, step-by-step approach to teaching clinical skills, by introducing video-assisted technology to prepare students for a summative assessment using simulation. It is anticipated that this innovative approach to the teaching of clinical skills will enhance the 'toolkit' of learning, teaching, and assessment strategies appropriate to contemporary midwifery preregistration education.

Keywords

Pre-registration midwifery education | Simulation | Education framework | Active blended learning

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The Nursing and Midwifery Council (NMC)'s draft framework for nursing and midwifery education states that a programme of study will only be approved if 'students are empowered and provided with the learning opportunities they need in a range of settings, using a variety of methods to achieve the desired programme outcomes and NMC proficiencies' (NMC, 2017: 4). This approach to learning and teaching is to ensure that student midwives are prepared to practise safely and effectively in line with the *Code* (NMC, 2015), and is supported by research suggesting that approved education institutions should adopt a wide range of strategies, such as keynote lectures, enquiry-based learning, simulation, and e-learning, to prepare students for the dynamic, unpredictable and complex environment of contemporary maternity services (Fraser et al, 2011).

There is ongoing debate in relation to how adults learn best, with the suggestion that the 'learning styles' pedagogical approach, which classifies students as visual, aural/auditory, read/write, or kinaesthetic learners (VAK or VARK) (Vark Learn Ltd, 2017), might limit rather than enhance the acquisition and retention of information (Power and Farmer, 2016). A topic-specific approach, adopting the most appropriate strategy for the topic or skill to be learned, rather than a learning-style-specific approach, which teaches according to the 'preference' of the learner as identified by a self-audit VAK/VARK test, may be an alternative.

Teaching clinical skills

Clinical skills education in pre-registration midwifery programmes typically involves the use of a skills lab, which contains relevant equipment and provides an opportunity for students to see a demonstration of the skill face-to-face before practising it under supervision, sometimes repeatedly. After this, they are then able to consolidate performance of the skill under the supervision of a midwifery mentor in practice (Bloomfield et al, 2013).

Educators are increasingly compelled to consider innovative approaches to teaching and learning strategies within the curriculum. Rutt (2017) questions the use

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of more traditional, didactic forms of skills teaching and suggests that this approach does not foster essential critical decision-making skills, as students are not encouraged to incorporate their knowledge and understanding of the underlying evidence base. There is also a significant shift towards the use of simulation for skills teaching, occurring in authentic environments and incorporating opportunities for reflection. Simulation for skills teaching has been found to bridge gaps between theory and practice, and positively affect how prepared and confident the student midwife feels to apply knowledge and skills in the practice setting (Lendahls and Oscarsson, 2017).

This article focuses on the modification of an accepted and traditional, four-stage, step-by-step approach to the delivery of skills teaching, using the example of airway management for the newborn infant that does not breathe at birth. It suggests one way of incorporating the principles behind the traditional teaching to form a more logical and contemporary strategy that avails of advancing technology and active blended learning approaches.

Developing active blended learning

At the University of Northampton, the pre-registration midwifery curriculum has been developed to enable first-year midwifery students to understand the theoretical concepts around the physiology of the newborn, and to relate this to basic resuscitative interventions. In the second year, the specific skills of managing the newborn infant's airway are acquired by students using a modified form of the traditional four-stage, step-by-step approach, where the skill is observed and practised before a summative objective, structured clinical examination (OSCE)-style assessment.

Third-year students will then participate in a structured simulation of a newborn resuscitation scenario. This approach enables student midwives to focus on the technical aspects of the skill first, before being expected to apply what they have learned in a simulation session, where multiple behaviours, such as team working, communication, decision making and leadership skills are holistically combined. A scaffolded approach, which allows the student to build on previous knowledge and to develop skills as they progress through the programme, is advocated, both in the teaching of newborn resuscitation, and in developing skill acquisition in the management of the newborn infant's airway (Bull and Sweet, 2015).

The approach that has been modified for the students at the midpoint of the programme is the 'four-stage approach', a systematic and structured teaching strategy used in many UK life support courses (Bullock et al, 2016).

The principles of the four-stage approach are as follows (Bullock et al, 2016):

- Stage 1: a silent demonstration of the skill by the tutor, allowing the student to observe the skill to real time

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Students are able to watch online skills demonstrations as often as they wish

- Stage 2: a demonstration with the addition of tutor dialogue, providing a deconstruction of the skill and a rationale for techniques and the structured approach
- Stage 3: another tutor-led demonstration, which encourages the student to verbally predict the next step and provide commentary for the tutor
- Stage 4: the student performs the skill independently with tutor and peer support.

Bullock et al (2016) outline how each stage allows the student to become confident to apply knowledge and perform a new skill. In stage one, the student can visually focus on the skill being performed expertly and realistically, while stage two breaks the skill down, allowing the student to make sense of it and relate the evidence base to various components of the skill. During the third stage, responsibility for the performance of the skill starts to shift from the tutor to the student, and in the fourth stage, the student practises the skill—numerous times if necessary—to develop confidence and competence.

The role of technology

Advances in technology allow educators to consider using an active blended approach to facilitate the teaching and learning of a clinical skill. A modified approach to the traditional face-to-face method of delivering, this structured teaching strategy involves the use of video-assisted technology, embedded into an online learning unit that students can access remotely. Videos of the tutor performing the skill in real time, and again with dialogue, are incorporated into a learning unit built within a software package known as 'Xerte'.

A Xerte toolkit allows tutors to create an interactive e-learning environment that goes further than being a repository of information (Xerte, 2015). Xerte has

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Key points

- Standards of proficiency for registered midwives are under review to ensure midwives continue to be adequately prepared to meet the demands of an ever more complex clinical environment
- Approved education institutions must ensure their programmes of study respond to service needs to ensure students are fit for purpose and practice at the point of registration
- Active blended learning is innovative and multidimensional, supporting students to develop key skills for contemporary midwifery practice

enabled the third stage of the four-stage approach to be delivered remotely by breaking the skill down into small segments, in which the student watches a short video clip of the skill and is required to select the next step from a variety of options. If the student selects an incorrect action, they are unable to progress and are taken back to the beginning of Stage 3. The only way they can progress through each stage of the skill is by selecting the correct option every time. Students have unlimited attempts and can view any part of the learning unit as often as they wish before attending a face-to-face session with a tutor and their peers in small groups for hands-on practice with mannequins.

This development of the four-stage approach to include e-learning aligns with the principles of active blended learning by ensuring that face-to-face teaching is practical and collaborative, with clear links to the interactive e-learning package. As a result, learning is multidimensional, encouraging students to develop autonomy, confidence and adaptability—key attributes for contemporary midwifery practice.

Evalutation

Qualitative feedback on this approach to teaching and learning was positive, with students commenting on the high quality of the learning package, and the benefits of being able to access the e-learning material an unlimited number of times (Misselbrook, 2017):

> ***'I think the Xerte learning tool is of great benefit as it enabled me to go through the learning stages at my own pace and I am able to revisit the information as often as I want in preparation for my assessment. I especially found the videos useful and with these found the content easier to understand.'***

> ***'I thought it was extremely useful. The videos were excellent. A good variety of media used too which encouraged learning. I found it very helpful.'***

Conclusion

Midwives in the UK are well trained, qualified and regulated; however, the increasingly complex demands of the clinical environment have necessitated a review of the standards of proficiency for registered midwives to ensure that student midwives continue to be adequately prepared, safe practitioners at the point of registration. By adopting innovative learning, teaching and assessment strategies, incorporating the judicious use of technology to complement more traditional approaches, approved education institutions are better placed to prepare midwifery students to meet the demands of their chosen career. **BJM**

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