

Research into experiential learning in nurse education

Barry Hill

ABSTRACT

This research is founded on an innovative pedagogical project as part of a higher education lecturer teaching qualification. This project involved redesigning the module 'advanced history taking and physical examination with clinical reasoning', a continuing professional development at a higher education institution. The author undertook an exploration of the literature, considering evidence on teaching styles and the way in which students learn and gain knowledge. The module was redesigned, implemented and then evaluated by the student participants. Key themes in the evaluation centred on the experiential learning style and experiential teaching style. There are numerous internal and external factors that affect teaching, and student learning. Experiential learning has provided a successful teaching pedagogy when applied to clinical skill acquisition, and has positively benefited the module delivery and pass rate, suggesting it has embedded 'deep learning'. Student feedback was positive, and the redesigned module has had a positive impact on student engagement and the teacher–student interaction.

Key words: Learning, Nursing education, Professional practice, Health Education, Medical history taking

This article will focus on a single module called: 'advanced history taking and physical examination with clinical reasoning'. The module makes use of interprofessional learning (IPL) and is aimed at health professionals working in advanced practice roles. The two assessments for this module are: a head-to-toe examination, examined by an objective structured clinical examination (OSCE) that requires students to demonstrate an advanced physical examination of all body systems using inspection, palpation, percussion and auscultation and a 2000- word assignment on the history-taking process (exploring subjective data) and evidence-based models such as the medical model.

The module was selected for this project owing to its suitability for the teaching course. A mixed group of 15 post- registration nurses, physiotherapists and paramedics were starting the module. The module study days are currently part theory and part practical. Previously, this has worked very well for some of the level 7 (Master's level) students, but has not worked so well for the level 6 (pre-registration level) students. Level 6 students were generally undertaking the module to improve knowledge and competence, and to 'top up' from a diploma in higher education (DipHE) to a Bachelor of Science (BSc). Level 7 students tended to be senior clinical professionals, working as nurse consultants, paramedics, and specialist nurses, already working in advanced clinical roles, with pre-existing advanced clinical skills. Consequently, these students had more experience and could apply the theory of clinical assessment and physical examination, with an enhanced ability to assess their patients and were better able to correctly identify anatomy and anatomical placement of human organs during the practical learning sessions.

Before the project, students practised their clinical skills in pairs using clinical equipment on one another fully dressed. However, something that became apparent was that the Level 6 students showed a disparity between their theoretical knowledge and their clinical skills acquisition during previous OSCEs. This led to the idea of exploring experiential learning.

Experiential learning is defined by Beard and Wilson (2013) as:

'A sense making process involving significant experiences that, to varying degrees, act as the source of learning. These experiences actively immerse and reflectively engage the inner world of the learner, as a whole person (including physical-bodily, intellectually, emotionally and spiritually) with the intricate "outer world" of the learning environment (including belonging and

doing—in places, spaces, within social, cultural, political context) to create memorable rich and effective experiences for and of learning.'

Beard and Wilson, 2013: 17

Innovation in teaching in health care

Innovation is described as doing something new, or something differently to contribute towards a positive change (McLeod and Thomson, 2002). Within higher education teaching, innovation aims to enhance, support and develop students' knowledge (Fry et al, 2015). Higher education institutions are accountable for student learning and engagement (Higher Education Academy, (HEA) 2011).

The HEA (2015) has produced a United Kingdom Professional Standards Framework (UKPSF) that says that academics must provide students with an excellent learning experience. This is also supported by the newly created Teaching Excellence Framework (TEF)

(<http://www.hefce.ac.uk/it/tef/>):

'The UK has a world-class higher education sector, with rigorous systems in place to ensure high quality teaching. The Teaching Excellence Framework (TEF) is a new scheme for recognising excellent teaching, in addition to existing national quality requirements for universities, colleges and other higher education providers.'

Higher Education Funding Council for England, 2017

Academics have a duty to their students, as guided by TEF, for generating and implementing creative ways of teaching and learning.

The Department of Health (DH) in England recommended that innovation was embedded into higher education curricula, competency frameworks and training programmes at every level (DH, 2011: 29). Clark and Webster (2012) questioned whether, in such a fast-paced world where creativity and innovation are evident, can academics keep up the pace? Chan (2016) suggested that for innovative teaching to be successful, a shared passion for student centeredness is needed, in an organisation that has a creative and supportive culture, enables teachers to be creative, harnessing the talents and the imagination of both teachers and students. The culture of education must be open to ideas and creativeness, and should celebrate successes of innovative ideas (Chan, 2016). However, there is a widespread reluctance to accept new ideas, expelling any new ways of working, known as the 'not made here' syndrome (Lichtenthaler and Ernst, 2006). This type of organisational culture (reluctance to change) is frowned upon, and goes against the recommended teaching standards within academia and the healthcare setting (HEA, 2015).

The report: *Innovation in Teaching and Learning in Health Higher Education* was created by both the Council of Deans of Health (CoDH) and the HEA to explore best practice innovations in health care (CoDH and HEA, 2015). It suggests that innovative practice and use of evidence-based practices are particularly important in healthcare education.

There have been many recent developments in healthcare governance following multiple care failings within the UK, with one example being the mid Staffordshire NHS Foundation Trust Enquiry following care failings and unacceptable professional practice (Care Quality Commission, 2013; Francis, 2013). This enquiry contributed to the rewriting of the new Nursing and Midwifery Council (NMC) (2015) Code and is likely to have an impact on redesigning nursing curricula. However, the education standards are still in draft form, and are out for consultation at the time of writing.

The Willis Commission suggested many changes for nurse education that are reflected in the NMC (2017) draft Standards of Proficiency for Registered Nurses (NMC, 2017). Similarly, a new framework (which will redesign expectations of nurses) has been written *Leading Change, Adding Value*. This

document places importance on redesign, innovation, and evidence-based practice (EBP) (NHS England, 2016).

Health Education England (HEE) and the NMC set up a review to examine nursing education and training (Lintern, 2014). The Shape of Caring report (Willis, 2015) discussed entry criteria for nursing degrees: all entrants should have an adequate amount of work experience in healthcare (approximately 1 years' experience), before becoming eligible for interview onto nursing programmes. It has been said that there must be a balance between education in the workplace and in the classroom (Ajani and Moez, 2011), expressing the need for the theory–practice gap to be minimised. Willis (2015) suggested that people are living longer and are becoming unhealthier, and therefore care is becoming much more complex, requiring an innovative, evidence-based, and clinically skilled workforce.

Patient-centred care should be at the forefront of nurse education, making it fit for purpose, inclusive of research and evaluative skills. Higher education institutions must recognise nursing as a practice and research discipline (Willis, 2015). CoDH and HEA (2015) and NHS England (2016) encouraged the uptake of new ideas in response to ensuring an educated, competent and caring healthcare workforce.

Literature review

The author undertook a literature review to explore the literature on enhancing student learning through innovative teaching, particularly using experiential learning. The search terms used were 'experiential learning', 'teaching', 'nursing', 'student', 'continuous professional development', 'teaching methods', 'teaching style' and 'learning styles'. The search engines used were CINAHL, Cochrane library and Education Resources Information Center (ERIC). Inclusion criteria were articles in English and articles on the topics of higher education, professional education and nursing education. Articles that were not about higher education, i.e. further education and below were excluded from the search. The search dates were from 1960 to 2017 as the author was keen to see if there was a historical pattern or preference in teaching and learning styles.

Lectures are a core method of teaching delivery within higher education institutions (Edwards et al, 2001; Freeman et al, 2014), even though early studies have identified concerns with this teaching method (MacManaway, 1970; Wolvin, 1983). MacManaway (1970) reported that 84% of students can only successfully engage in lectures for approximately 20–30 minutes at a time. Wolvin's (1983) research had similar findings, recognising that, typically, after the first 10 minutes, students' attention and focus on the lecture began to diminish. Similarly, Lloyd (1968) identified that students only wrote down a few notes during lectures and, importantly, that the usefulness of their notes was limited as students would only remember a small amount of the key content. Thomas (1972) found that students who were taught in lectures, performed better in exams when tested on content delivered at the beginning of a lecture, and performed worse in questions on the latter parts of information given in the lectures. Lambert (2014) found that students are not able to gain a deeper understanding of the key content via the lecture method of learning. Active learners take new information and apply it rather than merely taking note of it.

Despite the advances in education from technology, including virtual learning environments (VLEs), podcasts, and massive online open courses (MOOCs), lectures remain an accepted method of teaching within higher education. The reasons for this are debated, and said to be because of: how teachers were taught themselves, the volume of students in a group, availability of rooms and the availability of appropriate lecturers (Edwards et al, 2001; Fry et al, 2015). Charlton (2006) suggested that lectures are cost-effective when compared with seminar groups, as the requirement for

multiple lecturers is reduced and that all students receive standardised content when taught together by one academic.

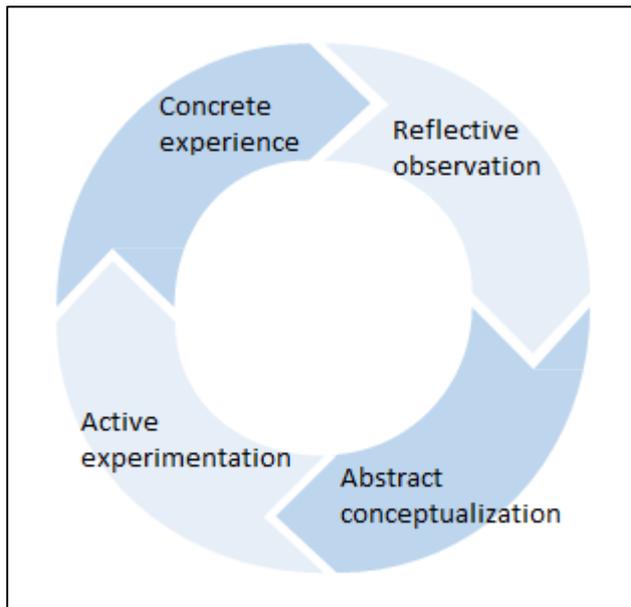


Figure 1. Kolb's (1984) theory

Biggs (1987) argued against the benefit of lecture-based teaching, and suggested that students do not obtain the required in-depth knowledge this way, lacking attention to detail and understanding especially in the larger lecture halls. Biggs (1987) noted that when working with smaller groups, rather than larger numbers in the lecture hall, academics are able to provide a more inclusive and student-focused teaching delivery; when a subject matter connects directly with students' experiences and goals, they care more about the material they seek to master.

Rhem (1995) recognised that lecturers teaching large groups can become content focused instead of ensuring that students are learning effectively. Fry et al (2015) suggested students must become actively engaged in the process of learning to benefit and develop their graduate skills for higher education.

Experiential learning

Experiential learning is a process that enables students to learn through 'doing', 'learning while experiencing', and learning through 'hands on practice' and 'reflection' (Kolb, 1984; Fry et al, 2015). The earliest definition of experiential learning can be found in 350BC, where the philosopher Aristotle wrote: 'for the things we have to learn before we can do them, we learn by doing them' (Wolk et al, 2011). Additionally, in the 18th century, Benjamin Franklin wrote:

'Tell me and I will forget, teach me and I may remember, involve me and I learn.'

This is also supported by Pfeiffer and Jones' (1975) 5-stage cycle of experiential learning. In the 1970s, Kolb established a theory of experiential learning, which he wrote based on the works of Piaget, Lewin and Dewey (Miettinen, 2000; Bergsteiner et al, 2010). Consequently, Kolb created a 4-stage experiential learning model, known as Kolb's model of experiential learning. Kolb's (1984) theory suggested that student learning and the learning process is not fixed, nor can it be the same for all learners as it is influenced by the learner's knowledge and experience. This therefore suggests that learning is individual and that Kolb believed that experiential learning is a continuous process whereby the learner will bring individual learning needs and experiences to their learning environment and learning communities (Kolb, 1984) (Figure 1). Consequently, Fry et al (2015)

suggested that this will draw upon a 'constructive' approach to learning, suggesting that this method views learning as a continuous cycle, rather than a fixed process. This means that knowledge is constructed from a base of prior knowledge, learners are not a 'blank slate' and knowledge cannot be imparted without the learner making sense of it according to his or her prior conceptions. Therefore, learners learn best when they can construct personal understanding based on experiencing things and reflecting on those experiences.

Jacobson and Ruddy (2004) built on both Kolb's 4-stage model and Pfeiffer and Jones's 5-stage cycle to create a 'questioning model' created to support educators in the promotion of 'critical reflection' and 'experiential learning'. These models create reflective discussion, enabling a debate that is transferable to the learner's own practice. Therefore, it could be suggested that the Jacobson and Ruddy's (2004) 5-question model benefits educators as the model actively applies Kolb's and Pfeiffer and Jones' theories of experiential learning.

Development of a new teaching strategy

An experiential learning method of learning could be very pertinent to nurse education, as the role of the nurse is principally to work with patients during illness, in difficult and challenging situations. Therefore, much of nurses' learning is practical (NMC, 2010; 2015). Therefore experiential learning is a method that is already embedded in the development of nursing knowledge and learning, as well as being a good method for teaching CPD.

The author and the academic critical care team who deliver the module met to discuss a design and pedagogy based on the characteristics of the learners. Previous student evaluations suggested that contemporary students want interaction, teamwork, structure, objectivity, and the ability to try out new ways of learning.

Experiential learning was used as a tool, encouraging students to apply their theoretical knowledge in a practical way within the learning environment. The aim was to draw human organs in their correct size and anatomical position onto white T-shirts while their partner was wearing the T-shirt. This allowed students to show evidence of their underpinning knowledge in an objective way: students had to draw data on to the material so that it could be objectively applied and reviewed. This allowed them to learn by 'doing' and by 'reflecting' (Kolb, 1984;Wolk, 2011; Fry et al, 2015).Working in this way encouraged teamwork and IPL (Miettinen, 2000: Bergsteiner et al, 2010). As the student group included multidisciplinary health professionals, it was important to create an engaging IPL environment. Interprofessional education consists of students from different health-related professions learning from, with and about each other to improve collaboration and the quality of care. IPL promotes effective communication, collaboration and teamwork within healthcare settings to improve patient care and student clinical learning outcomes (Olson and Bialocerkowski, 2014). Health professionals are required to work collaboratively together in clinical practice to provide best patient care by using evidence-based practice (Thomas and Dixon, 2012; NMC, 2015). IPL allows students to integrate, compare their clinical knowledge and skills, and 'learn by doing' while reflecting. Hays (2013) suggested that IPL is based on working and learning between multiprofessional groups, (this also includes the teacher and student), allowing development and preparation while working collaboratively.

Ethical considerations

Both Level 6 and Level 7 students were included and they were not separated into different groups. This was because both groups offered something different and allowed the teacher to facilitate knowledge and skills requisition in a variety of different ways. The Level 7 students were working in advanced practitioner roles undertaking this module as part of their MSc Advanced Practice award. The Level 6 students were new to advanced practice and were experienced nurses, but gained a lot

from the Level 7 students' expertise and experience. Both groups were able to learn from each other's questioning and techniques. Some worked in specialty areas so were expert in one area and novice in others.

A range of professionals, both male and female, took part. Cultural and religious needs were also respected, although no situations that needed to be resolved arose. Students could choose their partners. Ethical approval was granted for this study and the students gave permission for their quotes to be used.

Methodology

Experiential learning was chosen to encourage 15 students to learn the practical skills required for physical examination. Students were asked to work in pairs and explore their knowledge of human anatomy and organ placement using plain white T-shirts and fabric pens. The intention of this teaching strategy innovation was to allow a safe place to practise and refine skill acquisition and clinical reasoning skills for their OSCE and viva. Learning in this way would allow them to explore and share knowledge with their peers to encourage enquiry in a non-clinical environment that was safe, allowed reflection and facilitated learning.

Students used different coloured pens to draw human organs onto T-shirts. This enabled them to learn the anatomical placement and size of organs. Student learning is individual; however, this method suggested using diagrams, colours and visual prompts to instil knowledge, different to typical ways of learning. It also led to clinical questioning and prompted debate in the group regarding past experiences of patients with organomegaly (abnormal enlargement of organs). Each session allowed for reflective group discussion, so the students could work together, working from head to toe, system by system. When looking at the respiratory and cardiovascular systems and abdomen examination they used the T-shirts. Their newly acquired knowledge allowed for more accurate inspection, palpation, percussion and auscultation techniques.

The module

The module runs over 3 months. Each session has a dedicated morning or afternoon, with a theoretical PowerPoint of the anatomy and physiology, and a seminar exploring history taking and physical examination pertinent to that system. Each system had a 1-hour practice session to apply the principles of inspection, palpation, percussion and auscultation, with time for discussion. All students were given a prioritised list of what to do and they could practice in class for a full hour and then take this into practice and practise on their patients with a clinical advanced practitioner for support. Previously they had not been provided with practice sheets to take into clinical practice. We had made systematic practice sheets with pictorial instruction to appeal to different learning styles. In addition, the Bates' model (Bickley et al, 2017) has been used as an evidence base to underpin the clinical skills. This was the same model as the medical doctors were utilising in the trust.

Student evaluation and feedback

This intervention was evaluated well. Drawing anatomy on one another was novel for the students, and created a sense of enthusiasm. Using Kolb's (1984) experiential learning model to structure this intervention was a success.

The module was 3 months long and university policy dictates that there is a pre-session to gauge expectations, a midpoint evaluation and an endpoint evaluation. The midpoint evaluation consisted of sticky notes stuck to a traffic light poster with red, yellow and green feedback. The endpoint evaluation was a more formal official university module evaluation questionnaire.

The innovation was structured using Kolb's experiential learning cycle, in which the learners had an opportunity to utilise each of the 4 steps. After being taught the theory component, students had an

opportunity to gain some concrete experience, by doing a physical examination on a body system and gaining some experience of this skill. Once this had occurred multiple times in class, they were able to reflect on their initial experience of simulated learning, encouraging and allowing them to review their current level of knowledge and practice. Kolb identifies this step as reflective observation. Following this, students were supported to abstract conceptualisation, meaning that they could summarise the new skill and techniques, learning by reflecting on their simulated experience. Finally, students could actively experiment with their new skills by planning what they needed to do, and trying out what they had learned during simulated practice, on their patients when in their clinical roles under direct supervision of a clinical mentor (usually an advanced clinical practitioner or medic).

The intervention itself was very effective as a learning tool as all students passed their OSCE examination. Students also had improved their clinical reasoning skills during their OSCE and therefore had more confidence in clinical assessments than at the start of the module. This was identified in the student evaluations, which also reflected support and encouragement for this type of learning, suggesting that this and the reflective discussion were key to their successes.

Student feedback from evaluation of the module suggested that experimental learning allowed and encouraged them to learn in a positive way. A total of 70% of the group said the innovation allowed them to make mistakes and learn in a safe environment. Student comments in the module evaluation included:

'It allowed me to express my learning in different ways.'

'I know that I am a visual learner, so by learning through drawing the anatomy in colours on the T-shirts really allowed me to colour code systems and visually remember organ placement during my OSCE.'

The other 30% did not add comments on their module evaluation, and scored this section in the centre scale specifying 'neither agree or disagree'.

Discussion

The student's midpoint evaluations and endpoint evaluations were collated to identify key themes. The two most prominent themes were: experiential learning style and experiential teaching style.

The experiential learning style

Kolb (1984) and Fry et al (2015) both suggested that experiential learning is generally successful because, although it can sometimes be stressful and challenging, it can also be fun and interactive. It is believed to enhance student learning because they want to belong to a learning community (Kolb, 1984). Student comments included:

'I loved learning 'by doing', knowing that we had pens and T-shirts to learn with. This has changed my whole way of thinking about my learning, and how I learn.'

'This method has made such a difference to my learning, I was dreading coming to uni sitting in lectures, it can be so boring.'

Kolb's (1984) cycle of experiential learning supports creative learning, and suggests that as students are encouraged to plan, do, and reflect on their own learning, this ultimately leads to reflective practice (Kolb, 1984; Bilyk, 2013; NMC, 2015). One student said:

'I have never been taught this way before, I didn't lose focus as I was always doing something, or being asked something.'

Traditionally, didactic teaching methods have relied on teachers being authoritative (Banning, 2005), with students being passive learners (Eniko, 2014). Using an experiential approach to teaching and learning creates an equitable learning environment:

'I felt like we all had something to offer, we learnt from each other too, that's why I really enjoyed the reflective bit.'

It is suggested that didactic learning is very much teacher-centred, and its method relies on the students actively listening and memorising lecture content (Banning, 2005). Unfortunately, this may lead to surface learning and not deep learning (Fry et al, 2015). Students will be learning through repetition (Entwistle, 1997), not necessarily understanding the subject that is being taught (Walklin, 2000). Fry et al (2015) encouraged increased student engagement in their learning journey.

The experiential teaching style

It is important as a higher education lecturer to develop an understanding of the pedagogy of nursing subjects, to begin exploring important and fundamental topics within health sciences. However, this is not as easy as it seems.

Meyer and Land (2006) believed that one obstacle is that teachers tend to over-think and over-develop modules, which can lead to a dilemma in transferring this knowledge to the students. This can lead to students being taught a large amount of content. When taking part in the intervention, one student said:

'I can't believe that I have learnt so much, I usually can't take it all in, but learning this way has been great.'

Therefore, even when developing content for student nurses, the way in which the teacher engages with the learner, and the teaching style they adopt, will have an impact on the student's ability to understand and engage with their own learning (Fry et al, 2015). Meyer and Land (2006) noted that although students are being taught, this does not necessarily mean that they are actively learning. This is supported by a student in this intervention, who said:

'I usually remember only a small amount of content; however, now I can visualise the organ placement, all I see is colours, and it's really helped with my memory of anatomy.'

Another important point of consideration is recognising threshold concepts. They are:

'Akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress.'

Meyer and Land, 2003

Meyer and Land (2006) believed that by recognising 'threshold concepts' (first explored by Meyer and Land, 2003), higher education lecturers would benefit students by using a less-is-more approach in their teaching methods. This begins with developing student's ontological (a branch of philosophy that deals with the nature of existence) perspectives around their subject (physical examination), and exploring their phenomenological (lived) experience (how they do this in clinical practice, reflecting on what they have seen), which begins the process of understanding the topic. Bruce et al

(2014) believed that this process could be complex as it challenges students' beliefs and understanding of what they think they know. This has been suggested as 'troublesome knowledge', something challenging common sense and intuitive styles (Meyer and Land, 2003). Clinical practice when novice is sometimes based on intuition, knowing that something is wrong, but sometimes being unsure of what it is. As a person develops and becomes expert in their role they will be able to underpin these feelings with a knowledge base (Meyer and Land, 2003; Bickley et al, 2017).

Limitations

One of the limitations of the study included time. It would have benefited the students to have more time to develop their T-shirts during class. However, with the need for the theory session, and the need to practice using medical equipment, there was only 1 hour per session to draw anatomy on each other, followed by a 30-minute discussion.

These discussions were very informative and allowed students to learn from each other. Consideration would need to be taken if students are colour blind or have a physical disability as writing on T-shirts using coloured pens may be more challenging for them.

A flipped classroom approach could have been considered. A flipped classroom: ***'Is one where students access content and engage in activities designed to develop their understanding before class, and then use the class time to discuss and engage in depth with issues, ideas and questions arising from the pre- class content and activities.'***
Farmer, 2015

Conclusion

There is a mixture of internal and external influences on teaching and learning success, including the teaching environment, a student's level of study, the individual's ontological underpinning and desire to learn and engage, the culture of the higher education institution, the lecturer's teaching style, and the student's learning style. To implement innovative teaching and to improve the student experience and students engagement, these topics must be deliberated when developing curriculum in nursing education.

Experiential learning has proved successful as a teaching pedagogy for this project, resulting in all students passing their OSCE at first attempt. It is believed that by using this method to design of the module, the students have been able to engage in the learning process, and have developed 'deep learning', as opposed to the 'surface learning' they may have gained from lectures. However challenges of lectures may indicate an issue with the lecturer rather than the lecture itself. Consequently, the interdisciplinary and IPL elements used in the module enabled reflection and new ideas (for example on how to do things differently or working together) during discussion, which enabled the group to holistically engage in a learning experience that was diverse and new. Thus, experiential learning, inclusivity, and student-centeredness have led to a positive student experience. With students being engaged in their learning and joining a wider learning community, they are able to develop their skills and equip themselves for lifelong learning in a complex and challenging healthcare environment.

Key Points

- A project was undertaken to embed experiential learning in a module that is taught in a higher education institution
- There are a number of theories that underpin experiential learning and these were used to design the module
- The project involved a new part of the module where students learned about organ position by drawing on white T-shirts with fabric pens

- There was positive feedback from students on the module

CPD reflective questions

- Have you had any experience of experiential learning? Reflect on whether the experience had an impact on your practice and patient outcome
- What kind of experiential learning do you think would be/would have been helpful to you, and when do you think would have been the appropriate time for these to take place and why? If you organise teaching sessions, would it be useful to embed experiential learning in your teaching, and how would you do this?
- Think about the ways in which you learn—can you think of strategies that might assist you in your academic learning or continuing professional development?

Declaration of interest: none

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