

Top tips on being a medical educator

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Abstract

Medical educators need to understand that teaching is not the same as learning, and that professional education is different to education in general. There are 4 key ingredients to becoming an expert. Doctors learn from practice in a clinical environment so work-based teaching and learning should be emphasised much more than 'training days'. Opportunistic teaching requires some planning but can easily be incorporated in to the business of the working day. Good educational practice requires a knowledge of academic medical education, and the best medical educators are also good role models.

Keywords

Professional education; Competency: Expertise; Work-based learning.

Search strategy

An electronic search was performed in Medline for articles relating to work-based learning in postgraduate medical education in the last 10 years. Best evidence medical education (BEME) reviews, and information from the author's reference library were also included, where relevant.

Introduction

The most fundamental thing a medical educator needs to understand is that teaching is not the same as learning. The second most fundamental thing a medical educator needs to understand is the nature of professional education.

This short article aims to give an overview of some key concepts in medical education, with some practical tips on how you can help people on their journey to become expert professionals, and how you can facilitate work-based learning.

Issues such as dealing with doctors in difficulty, personal support and mentoring, putting a curriculum in to practice and quality assurance will not be covered here.

Teaching is not the same as learning

Learning is 'internalisation of knowledge'. It is best conceived as a process rather than an outcome. Teaching is one but not the only way of facilitating this. Postgraduate medical education is a mixture of learning from:

- Daily work
- Feedback (which includes 'what happened next' as well as patient and colleague responses)
- Conversations
- Opportunistic teaching
- The study of written or web-based material
- Projects
- Formal teaching sessions

However, for successful learning to happen some key factors have been described¹ including: wanting to learn; needing to learn; learning by doing (practice, repetition and experience); and making sense of things or 'digesting'. All these factors occur simultaneously and also affect each other.

Although there may be a formal curriculum (a document outlining the intentions, processes and outcomes of an educational programme), trainees often experience something very different – described as the informal, hidden and assessed curricula. For example, 'We may think we are urging our students to become independent learners, critical thinkers and good at clinical reasoning, using their adult maturity and experiences to take them beyond the textbook learning of their previous experiences. But, in fact, our teaching styles and educational strategies may be just as teacher-centred, textbook-based and implicitly authority dependent...as the most traditional teaching of the nineteenth century.'²

So what you teach is not necessarily what people learn. The key is to align teaching methods as well as content, the educational environment, and assessments with what you are trying to achieve.

Professional education

When the Foundation Programme Curriculum was revised in 2007, it emphasised that doctors learn from practice in a clinical environment, rather than the classroom.³ It also stressed the concept of expertise, which is something different to competence, and is the goal of professional education.

It is worth pausing here to clarify some definitions. 'Competency' refers to the ability to perform a certain skill, e.g. insert an intravenous

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Biography

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cannula. Acquiring a set of competencies does not mean that a doctor is competent, e.g. at managing an acutely ill patient. 'Competence' refers to being adequately qualified. Expertise refers to skill, plus (in medicine) several invisible attributes,⁴ such as judgement, reasoning and expert intuition.

Curricula in postgraduate medical education are often based on several false assumptions,⁵ including:

- Professional practice is a simple activity that yields to simple rules
- Skill learning is about simple repetition
- Skills make people competent
- Professional education and development requires professionals to leave their practice setting and study away from it 'in protected time', e.g. learning teamwork.
- There is a simple applicatory relationship between theory and practice

In fact there is lots of evidence to show the opposite.^{6–9} Medical educators are faced with the challenge of producing expert professionals in a shorter, more focussed time period with an educational infrastructure that is still catching up. So how can we make a start?

How people become experts

There are 4 key ingredients to becoming an expert. Medical educators can help by making these explicit, and facilitating and coaching trainees in them:

- Experience
- Feedback
- Deliberate practice
- Reflection

Research shows that for most everyday activities, such as driving a car, an acceptable level of performance can be achieved within 50 hours of practice. But for professional practice, it takes around 10 years of intensive involvement in a discipline to become an expert, whether it is a concert pianist, sports player or physician.⁹ This consistent research obviously has implications for postgraduate medical education.

However, all the experience in the world does not matter if it is the wrong experience. Without an expert to give feedback on your performance, you cannot improve, as 'you don't know what you don't know'. Studies show that trainees want and welcome feedback, but say they do not experience it very often.¹⁰

Deliberate practice involves effort. It refers to time spent on a specific activity designed to improve performance in a particular aspect of practice. This is not the same as simply going on a course, e.g. Advanced Life Support. Experience and continued training have been shown to improve performance whereas continuing experience alone leads to a progressive decline in performance.⁹

Reflection is a vital aspect of developing expert

professional practice. Simply put, reflective practice is when we view our practice from different perspectives: our own experiences; our colleagues' and patients' experiences and perceptions; and the literature. Reflection can be written, verbal or simply thinking. It can happen in the middle of an event, afterwards, even beforehand. It can happen in your study or in the pub.

If you think carefully about these 4 key ingredients, you will probably realise that the best doctors do this already, without realising.

Work-based learning

Part of being a good medical educator is about facilitating work-based learning. Medical educators should encourage the activities listed at the start of this article. Two on the list deserve further mention: feedback and opportunistic teaching.

Like many things in medical education, feedback has been thoroughly studied. Feedback can positively change clinical performance when it is systematically delivered from credible sources. For feedback to be effective its content should be clear and delivered in a timely, interactive, face-to-face and non-judgemental environment.

Holmboe et al proposed a useful model for feedback in postgraduate medical education.¹¹ Effective feedback:

- Is interactive
- Encourages self-assessment
- Involves an explicit action plan

There is a good reason why feedback should start with the question, 'How do you think that went?' Exploring a trainee's insight in to problem areas is a vital aspect of giving 'negative' feedback. Kruger and Dunning famously won the Ig Nobel Prize for Psychology for demonstrating that incompetent individuals tend to overestimate their own level of performance – and also that if they can be trained substantially to improve their own skill level, they also gain the insight to acknowledge their own previous lack of skill.¹²

Feedback should focus on one or two areas for improvement. Starting with things that went well shows you were paying attention. Focussing on only one or two areas for improvement helps in the development of an achievable action plan. Learning is a process.

Opportunistic teaching is a problem area for most senior doctors. Many think that they can be either focussing on teaching or patient care but not both at the same time. While it is true that opportunistic teaching requires preparation just like a 'formal' teaching session, there are various models to help you facilitate learning at the same time as seeing patients. Try one or two on your next ward round, here they are:

- *Thinking aloud* – as experts, some of our clinical judgements appear to be intuitive and therefore unteachable, but with shorter, more focussed postgraduate training, there is a need to make explicit

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a. **One-Minute Preceptor Model**

Trainee presents a case, then the teacher:

- Gets an idea about what the trainee thinks the problem is
- Probes their reasoning and alternative explanations
- Teaches one or two general principles
- Feeds back about what the trainee did well
- Corrects one or two errors in reasoning

The One-Minute Preceptor is a good model for ward rounds, and does not take any more time.

b. **SNAPPS Model** (developed originally for out patients)

The trainee:

- Summarises
- Narrows down
- Analyses the differentials
- Probes the teacher about uncertainties
- Plans the patient management
- Selects a topic for self-directed learning

Box 1. Teaching in chunks.¹⁴

things that were previously ‘gained by osmosis’ over time. Speak out loud the steps you took to get you to a particular decision.

- **Demonstrations** – the key thing is to remember to announce you are demonstrating something beforehand, so people can pay attention. ‘Watch how I

take this history/perform this manoeuvre – we’re going to talk about it in a minute.’

- **Observing trainees** – often we assume that a trainee who performs well in one area also performs well in another. If you try observing once in a while, you will experience what Norcini – who researched many of our work-based assessments – calls, ‘Oh my God!’ moments.¹³ Try swapping roles with your registrar for part of the ward round. Registrars are meant to be observed doing the post-take ward round; very few are on a regular basis.
- **Teaching in chunks**¹⁴ – using models such as the ‘one minute preceptor’ or ‘SNAPPS’ model – see Box 1.

And finally...

The final top tips for being a medical educator are: study academic medical education and be a role model.

Education is a medical specialty just like paediatrics or orthopaedics. Good educational practice is not always a matter of ‘common sense’. Reading about education and understanding some important principles and models like the ones above will help you improve your own educational practice.

Trainees (and colleagues) learn from observing who you are. Excellence needs to be modelled for people to know what it looks like. The American Medical Association defined this by saying good doctors are knowledgeable, skilful, dutiful and altruistic.¹⁵ We all recognise that being a good doctor is not just about knowledge, teaching it is just the same.

References

1. Race P. Making Learning Happen: a guide for post-compulsory education. Sage, London, 2005.
2. Davis M. Principles of curriculum development. University of Dundee Masters Programme in Medical Education, 2003.
3. Academy of Medical Royal Colleges, in co-operation with Modernising Medical Careers and the Departments of Health. Curriculum for the Foundation Years for postgraduate education and training. London, 2007.
4. Fish D and De Cossart L. Developing the wise doctor: a resource for trainers and trainees (in practice). Royal Society of Medicine Press, London 2007.
5. Fish D and Coles C. Medical Education – developing a curriculum for practice. OUP/McGraw-Hill Education. Maidenhead, 2005.
6. Talbot M. Monkey see, monkey do. A critique of the competency model in graduate medical education. *Med Educ* 2004; **38**: 587–92.
7. Talbot M. Good wine may need to mature: a critique of accelerated higher specialist training. Evidence from cognitive neuroscience. *Med Educ* 2004; **38**: 399–408.
8. Olle Ten Cate. Trust, competence and the supervisor’s role in postgraduate training. *BMJ* 2006; **333**: 748–51.
9. Ericsson KA. Deliberate practice and the acquisition and maintenance of expert performance in medicine and related domains. *Acad Med* 2004; **79** (10 Suppl): S70–81.
10. Isaacson JH, Posk LK, Litaker DG, Halperin AK. Resident perceptions of the evaluation process. *J Gen Intern Med* 1995; **10** (Suppl): 89.
11. Holmboe ES, Yepes M, Williams F. Feedback and the mini clinical evaluation exercise. *J Gen Intern Med* 2004; **19**: 558–61.
12. Kruger J and Dunning D. Unskilled and unaware of it: how difficulties in recognizing one’s own incompetence leads to inflated self-assessments. *J Personality Soc Psychol* 1999; **77**(6): 1121–34.
13. Holmboe ES. Faculty and the observation of trainees’ clinical skills: problems and opportunities. *Academic Medicine* 2004; **79**(1): 16–22.
14. Irby DM, Wilkerson L. Teaching when time is limited. *BMJ* 2008; **336**: 384–7.
15. Association of American Medical Colleges. Learning objectives for medical student education – guidelines for medical schools. AAMC 1998. www.aamc.org/meded/msop/start.htm (last accessed Aug 09).