

Competency-based training: who benefits?

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ABSTRACT

Competency based training describes progression through training referenced to the demonstrated ability to perform certain tasks. In recent years, this has become the dominant curriculum model. We seek to examine who benefits from a competency based approach to medical education. For the regulators and service, the apparent advantage is in terms of apparent measurable accountability and flexibility. For assessors, the promise of competence based assessments in the workplace to provide a reliable and objective measurement of a trainee's performance has not been demonstrated in practice. For the doctor in training, there is very little evidence to show benefit from competency based training. Competency based training places emphasis on individual skills rather than overall learning experience thus risks diminishing the role of the trainee in the workplace. Any form of medical education that devalues workplace based learning will ultimately harm the profession and, in turn, patient care.

INTRODUCTION

What is competency-based training?

Competence is defined as 'the ability to do something successfully',¹ that is, the ability to perform a given task. Based on this dictionary definition, competency-based training describes progression referenced to the demonstrated ability to perform certain tasks. This is an attractive enough notion (after all, who wouldn't want their doctors to be competent?), but as one commentator has put it: 'Competency-based medical education is more easily approved of than defined'.²

Competency-based training has its roots in the 1970s when a behaviourist approach to training (essentially the analysis of occupational roles and their translation into tasks or competencies),³ led to the introduction of NVQs (National Vocational Qualifications) into the UK and other similar higher education qualifications worldwide. The central assumption of a competency approach is that an occupation can be broken down into smaller elements of defined knowledge and skills (competencies), and that achievement of an accepted level in each of these domains will lead to overall proficiency.

The literature refers to both competency-based education and competency-based training. The unstable and contested nature of definitions in education make it challenging to choose between the two. Nevertheless, it seems an internal contradiction to align education, which is generally thought to be a broad and rich process, and competency attainment which is generally thought of in instrumental terms. We therefore use the term 'competency-based training'.

The problem with this assumption, as applied to medical education, is that being a doctor is much more than the sum of the individual tasks performed. As such, a consistent challenge for competency-based curricula is the definition of those qualities which actually define the practice of doctors. Professionalism, leadership, empathy, problem solving, complex decision making and clinical judgment, managing resources and so on, are high-level integrated cognitive and performance skills, and as such, do not fit into a behaviourist model. As a result, a range of modified descriptors has emerged: core competencies, generic competencies, metacompetencies, and the indecipherable 'entrustable professional activities'.⁴ All these serve as attempts to fit into a competency framework what doctors actually do.

In 2010, the group, International Competency Based Medical Education (CBME), collaborators defined competence-based education as 'an outcomes-based approach to the design, implementation, assessment and evaluation of a medical education program using an organizing framework of competencies'.⁵ A competence-based approach is, therefore, presented as a subset, or variant, of another approach to curriculum design. But what does this actually mean for trainees? In practice, competency-based education translates into practice as a curriculum framed as a set of specific skills, behaviours and knowledge outcomes, workplace-based assessments, and regular reviews of progress assessing achievement of the various competencies as outlined in the curriculum. The emphasis is on the responsibility of trainees to achieve the competencies, and the assumption is that the workplace will be able to provide the right experiences to achieve them. Importantly, progression is said to be competency-based, not time-based, supposedly facilitating faster progression for those doing well, and deferral of progression for those deemed unsatisfactory for their stage in training. This has not really been seen in practice, perhaps because of the implicit recognition that attainment of isolated competencies is not equivalent to safe professional practice which also required accumulated experience, combined with the practical challenges of having trainees rotating at different speeds through set posts.

Who wants competency-based training?

Regulators

The Accreditation Committee for Graduate Medical Education in the USA and the Australian Medical Council have required postgraduate training programmes to adopt a competency-based approach since the mid-2000s. The General Medical Council (GMC) in the UK does not require competency-based curricula but, nevertheless,

seems to imply an advantage of such an approach in terms of accountability. According to the GMC, 'The regulatory framework needs to provide patients, employers and doctors with a clear understanding of the levels of competence expected of doctors at successive stages of their training'.⁶

This emphasis on accountability reflects a social and political shift which has reinforced the regulation of all professions. It seems to follow, then, that if we expect doctors to be held to account, we need to be able to describe what doctors should be able to do, and to be sure that we have assessed that they can do it. A competency model of training would then seem to be a convenient way to deliver this reassurance to politicians and the public. This is particularly so, given that assessments are most easily designed on the basis of a competency-based curriculum.

Over the last 20 years, training has become shorter and more structured. In the UK, first the Higher Specialist Training Reforms ('Calman') of 1995, then the European Working Time Directive (reducing the maximum working week from 56 h to 48 h in 2002) have reduced the overall experience of the trainee in terms of hours-on-the-job.⁷ Shift working in most acute specialities has led to an increase in the number of posts which dilutes the quality and quantity of training opportunities that a job can provide. Gaps in rotas, more doctors training less than full time, trainees taking time out of training for research and other reasons, also have an impact on training time.

Competency-based training deals with the issue of reduced training time, and so reduced experience of practice, by sidestepping the issue. By focussing on progression, though training being via the acquisition of competencies, rather than time spent in training and clinical practice, the importance of the time trainees spend learning in the workplace, and engaging in the practice of the profession, is neglected. This leaves training programmes vulnerable to political pressure to respond to workforce planning issues by further shortening training when it is not in the trainees' best interests. Nonetheless, there is no example in practice of trainees progressing more quickly or more slowly as a result of competence assessments.

The duty of the Regulator is primarily to protect the patients and public. Although patients value the competence of the doctor in terms of knowledge and technical skills, the patient relationship and character virtues, the literature suggests that they are not concerned with the acquisition of *competencies*, just that they can be assured of the *competence* of the doctor in front of them.⁸

Assessors

An often quoted advantage of competency-based training is that it promises objectivity in assessment.⁹ Competency-based assessment requires tasks to be broken down into observable chunks which can be identified as being performed competently by an objective observer, the intention being to remove subjectivity and increase reproducibility. However, even competency assessments broken down into the most detailed of checklists show significant intraobserver variability.¹⁰

We know from work done on Objective Structured Clinical Examinations (OSCE) that checklists are not a good discriminator of expertise. There is evidence to suggest that experienced physicians may even score more poorly than junior doctors and students when evaluated by binary checklists.¹¹ As a result, most OSCEs now have some measure of 'global rating' added where the assessor is invited to score on the basis of overall performance. Despite their subjectivity, global ratings do show construct validity and have been shown to be sensitive to

trainee experience,¹² unlike checklists. Similarly, introducing an element of subjectivity in workplace-based assessments (WPBA) has been shown to increase reliability and discrimination between trainees. Crossley *et al*¹³ demonstrate that introducing global ratings based on the essentially subjective 'Do I trust this trainee to perform this task independently?' led to assessors discriminating more widely between high- and low-achieving trainees, and trainees being rated more similarly between assessors. So some professional judgment in assessment may not be a bad thing, in fact, it might actually be very good.

This is supported by evidence which shows that there is no single way that expert doctors or other professionals approach a problem.¹⁴ To deem someone incompetent because they perform steps in a different order, or the reverse: to assume that just because someone performs certain steps in a certain way that they will be able to generalise those skills and apply them in different situations, is not borne out in research into the way that doctors think. Finally, we know from the assessment data on the case specificity of responses that a competence that can be applied to one case might not be applicable to another case. So, attainment of a competence is not context-free.¹⁵

Trainees

There is no doubt that trainees need and want curricula of some sort. Trainees want to know what they need to know, and what may form the basis of their assessments. So how do trainees actually use competency-based curricula? Examples of some statements from competency-based curricula in the UK are listed below.

1. Know the inheritance patterns of common genetically determined metabolic disorders (Royal College of Paediatrics and Child Health Level 1 competency: metabolic medicine).
2. Identify and record risk factors for conditions relevant to mode of presentation (Mandatory Level 1 competency: Generic curriculum for the medical specialities. Federation of the Royal Colleges of Physicians).
3. Anticipate future clinical events and plan appropriately (clinical competency, core curriculum module 1: basic clinical skills, Royal College of Obstetrics and Gynaecology).

What we can notice is that taken in isolation, these statements are almost meaningless (what future events are we required to anticipate?), and that even in reading the curriculum document some level of higher-order clinical judgement and experience is required to infer what is actually required of the trainee. We also begin to see that for the trainee, the difference between a competency (what a doctor can do) and an objective (what a student will display at the end of the course) is negligible when written in a curriculum statement. In reality, the two terms are used interchangeably by trainees and training programmes. We have lectures which aim to achieve competencies, e-learning modules are organised by competency and even success in exams has been described as a competency. In practice, competencies, objectives and learning outcomes are all the same thing.

Ask any trainee what the main impact competency-based training has had on their training and they are likely to mention WPBA. WPBAs are unpopular with trainees who do not value them as having educational impact. A systematic review in 2010 supports this view, concluding that there is little evidence in the literature to date to support the use of WPBA as an educational tool.¹⁶ The authors note that there was some limited evidence that multisource feedback may lead

to improved performance, but factors such as the context of the feedback and the presence of facilitation seem to have a profound effect on the response. In other words, the quality of the feedback a trainee was receiving was important in affecting the likelihood of it leading to an improvement in performance, not the use of workplace-based assessments per se.

Once competency curricula are set, the implication seems to be that the trainees will be provided with opportunities to achieve those competencies. Varicose vein surgery is an index procedure as defined by the Intercollegiate Surgical Training Programme in the UK.¹⁷ Varicose vein surgery has, meanwhile, become less widely available on the National Health Service (NHS), and thus, less available as a training opportunity.¹⁸ If funding were to be completely withdrawn for some types of varicose vein surgeries, then trainees would be unable to become 'competent'. Whether or not varicose vein surgery should be provided on the NHS is a separate debate, but this raises the question of how able are fixed competency curricula to reflect current best practice. Do we have a duty to provide opportunities to achieve competencies when we do not consider it to be either cost effective or in the patients' best interests? This is counterintuitive.

At the same time as the adoption of competency-based training, simulation has become firmly established as a learning tool within competency-defined curricula,¹⁹ and is frequently cited as a safe environment by which learners can repeatedly practise a range of clinical skills. Where attention is paid to re-creating an authentic clinical context, simulated learning environments can provide powerful and valuable learning experiences.²⁰ However, if simulation environments operate in isolation from their clinical context, the need to develop the full range of complex clinical judgements necessary for performance as a doctor is neglected. This has been recognised as authors call for commitment to integration of simulation into clinical practice.²¹

There is very little evidence in the literature to suggest that trainee doctors in competency-based training programmes value the experience. Although trainees are known to consider lists of competencies as important, a qualitative study of trainee experiences in a competency-based programme noted that competencies were scarcely mentioned in their reflections, with students primarily focussing on the quality of the feedback received and their examination grades.^{22 23}

In recent years, the quality of the training experience and working relationships that junior doctors develop has come under pressure from shortened training time and shift working. The advent of consultant-delivered care is likely to further reduce the role of trainees in the workplace. By focussing on the acquisition of discrete competencies, rather than the overall experience of the doctor who is learning in the workplace, we may actually make this situation worse, and compound a possible lack of preparedness for independent practice.

The profession

To be a professional is to have expertise, autonomy, skills and ultimately to be in service to others. All forms of professional education share the goal of readying students for accomplished and responsible practice.²⁴ All training programmes must ultimately facilitate the development of an autonomous professional. Historically, trainees became part of the profession over time, through apprenticeship which acted as induction into the profession. In recent times, the apprenticeship model has been widely regarded to be a thing of the past, perhaps because of the unpredictability and complexity of the authentic clinical

environment, and the competency model has emerged as a viable, simpler alternative.

Doctors want to learn at work, in service, from experts. There is evidence that good role modelling is a key process in medical education: experts have tacit knowledge beyond that which is described by curricula, and they impart this to trainees in a variety of ways.²⁵ In particular, professionalism is what learners seek from their role models.²⁶ A good role model can inspire, make the implicit explicit, facilitate reflection and model compassion.

Recognising the limitations of current educational theory, the concept of a 'new apprenticeship' has been called for,²⁷ based on Lave and Wenger's ideas of 'communities of practice', and the 'legitimate peripheral participation' of trainees in professional practice.^{28 29} Here, emphasis is placed on the importance of learning in the workplace. It is in the workplace that the trainee incorporates the social and cultural elements of becoming a professional, where they learn to apply their knowledge and skills, essentially, where they actually learn to be a doctor. A central goal of any curriculum must be to prepare trainee doctors for the profession, and it is because of the inability of a competency-based curriculum to take these important social and cultural aspects of professionalism into account, that they are ultimately inadequate to do so.

The current focus on the need for everything doctors do to be described in terms of competencies may stifle the development of the profession. An example is the emerging field of integrated paediatric care: by creating training opportunities for paediatric doctors to learn alongside their primary care colleagues there is an instant felt (but not required) necessity to define the competencies they are expected to achieve. But these are new posts, with as yet unknown educational outcomes. It may be that the learning for the individual is not what was envisaged: it may be greater, richer, stronger or just different. But if the doctor has not achieved the 'competencies' set, then they may be disheartened, demotivated or worse criticised, with their enthusiasm to innovate diminished.

The interesting question, perhaps, is why the profession has tried to adopt this format when they are not obliged to do so by regulators or any other authority.

CONCLUSION

Competency-based training has arisen out of behaviourist educational theory from the 1970s and has since achieved the status of an international movement. This is largely as a result of political, societal and regulatory changes.

Hodges has argued in his paper 'Medical Education and the Maintenance of Incompetence',³⁰ that overemphasis on any one model of medical education is harmful. As all educational models are inherently imperfect, over-reliance on one theory will produce educational side effects leading to 'hidden incompetence' in the areas of practice for which the educational model has failed to prepare the learner. We have argued that the widespread and uncritical adoption of competency-based training has a number of 'side effects'.

For any curriculum to be useful it must describe the desired outcome for the learner and ensure that the learning experiences that lead to that outcome are used.³¹ A competency-based curriculum cannot describe what it is to be a professional. This is because the concept of competency-based training is inadequate to describe the higher cognitive skills and the integrated and individual application and structure of complex knowledge, skills and problem-solving necessary for professional performance, and lacks the necessary emphasis on the

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experiences of working in service alongside other professionals which is needed to achieve this.

Just as Stenhouse argued in the 1980s, that defining curricula in terms of objectives was unsuitable to describe professional development or problem solving, we can now apply exactly the same argument to competencies.³² Competency-based training puts the emphasis on a minimum standard, discouraging excellence, restricts innovation and disempowers trainees from taking control of their own learning.³³ Competency-based training has been widely put forward as part of the solution to reduced training time and other changes in working patterns that have come about due to political and societal changes in recent years. We believe that the widespread adoption of competency-based training has actually contributed to the harm caused by these changes. We call for a re-emphasis on the importance of a rich pattern of learning in the workplace in order to defend the practice of the profession.

Main messages

- ▶ Competency-based training has been universally adopted largely because of political and societal reasons.
- ▶ Competency-based training is inadequate to describe the higher-order skills necessary to practise as a professional.
- ▶ Competency-based training reduces emphasis on the importance of learning in the workplace.
- ▶ The uncritical adoption of competency-based training may actually harm professional practice.

Current research questions

- ▶ How do trainees completing competency-based higher specialist training programmes perceive their readiness for consultant posts in relation to their mastery of the stated competences?
- ▶ What impact does the introduction of a subjective global score on workplace-based assessments (WPBA) have on the quality of feedback given to trainees?
- ▶ How can quality workplace experience for trainees be reflected in performance indicators (PI) required for educational commissioning?

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