

# 1 Understanding Medical Education

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It was the nuclear physicist and father of the hydrogen bomb, Edmund Teller, who wrote (perhaps rather alarmingly) 'Confusion is no bad thing; it is the first step towards understanding' [1, p. 79]. Newcomers to the field of medical education could be forgiven for being confused. Medical education is a busy, clamorous place, where a host of pedagogical practices, educational philosophies, and conceptual frameworks collide. It is a place where academic journals vie for attention, institutions and professional bodies compete for political leverage, and the wheel of reform and 'improvement' revolves faster than, and often independently of, the cycle of evaluation and research. And it is a place of increasing accountability and regulation because of its proximity to one of the prime socio-political concerns of government, that of the health of its people.

It was the desire to develop evidence-based policy and practice in this complex arena that led to the establishment of the Association for the Study of Medical Education (ASME) in 1957. The past 60 years have seen a burgeoning of literature in the field. This is both a help *and* a challenge to the clinician taking on responsibilities for teaching, assessment, and educational supervision. The range and diversity of relevant theory and research are now almost overwhelming, and in 2006 ASME recognised the need for a succinct yet comprehensive guide to the vast literature now underpinning best practice in medical education. *Understanding Medical Education* aims to be that guide.

## What is Medical Education?

Medical education as we know it today spans three sectors: undergraduate, postgraduate, and the continuing professional development of established clinicians. However, it has not always been that way, and Abraham Flexner – the centenary of whose seminal report on the transformation of the American medical school system was celebrated earlier this decade [2] – would not have recognised the attention currently given to the design, management, and quality assurance of structured training in the postgraduate years, still less the need to instigate regulatory systems to ensure the ongoing personal and professional development of practising clinicians.

Medical education's ultimate aim is to supply society with a knowledgeable, skilled, and up-to-date cadre of

health care professionals who put patient care above self-interest, and who undertake to maintain and develop their expertise over the course of a lifelong career. Medicine has a privileged position in society and, as a result, medical education is itself set apart from the main body of higher education. In many countries it luxuriates in separate funding streams and higher rates of remuneration for its clinical teachers; it is the beneficiary of status and patronage through its colleges, academies, and professional institutions; and it is a formidably powerful, and predominantly conservative, political lobby, more than occasionally a source of frustration for those who seek to modernise health services.

Within the confines of this academic and political preserve lies the discipline of medical education; although one could question whether medical education is a discipline in its own right, or an idiosyncratic collection of concepts appropriated from other educational fields and perfused with a technical rationality borne out of the dominance of bioscience within medicine [3, 4]. There are certainly a number of predominant educational assumptions, such as experiential learning and reflective practice, and favoured curricular approaches borrowed from other fields – witness the enthusiastic transplantation of competency-based education from vocational training [5]. But medical education is not just a 'magpie', taking ideas wherever they can be found, but has made, and continues to make, its own significant advances and contributions to the wider educational literature. Many of these unique and major developments are expounded within this book: problem-based learning, simulation, structured assessments of clinical competence, supervision, and the use of technology to enhance learning, to name but a few.

## Challenges and Preoccupations

Another characteristic of medical education is that it is, as Cooke and her colleagues note, 'in a perpetual state of unrest' [6, p. 1339]. A constant stream of reports issues from regulators, commissions, inquiries, and task forces – all urging reform. This may just reflect the sluggish response to change and innate conservatism of the profession and its educational institutions. This is not, as it happens, a new phenomenon. In the UK, George Pickering, writing as far back as 1956, offers us the wry observation that 'no country

has produced so many excellent analyses of the present defects of medical education as has Britain, and no country has done less to implement them' [7]. Britain is not alone in this regard and from the other side of the Atlantic, Warren Anderson – in a special centenary 'Flexner' edition of *Medical Education* – questions 'whether the current proliferation of literature about reforms in medical education can lead to real change, or whether it constitutes a self-referential agitation that, in the aggregate, holds little promise' [8, p. 29]. Despite such reservations, the frequency of such reports increases, and the clarion calls to action grow ever louder. So what are the current preoccupations of medical education and society's expectations of it?

To 'begin at the beginning'; getting the right students and later on the right trainees training in the right specialty is crucial. In a competitive and litigious environment, the importance of having demonstrably fair selection processes is unarguable. A good person/job fit is essential to productivity, quality, and job satisfaction. In Chapter 26, Fiona Patterson and her colleagues identify just how difficult getting all this right can be. Predicting who will make a good doctor is critically dependent on what the role of the doctor will be 10–15 years into the future, something that is increasingly uncertain. So are there generic attributes that we can select for? What selection methods should we use? And to encourage the recruitment of well-rounded practitioners, should entry to medical school be graduate only?

Having selected the right students and, with luck, matched the right trainees to the most suitable postgraduate training programme, how and what are they to learn, and how can the *quality* of their education and training be ensured? An array of approaches to teaching and learning are described in the central section of this book framed by a discussion by Janet Grant on approaches to curriculum (Chapter 5) and Linda Snell and colleagues on the importance of good instructional design (Chapter 6). A concise summary of relevant, and guiding, educational theory is provided by David Kaufman in Chapter 4, preceded by a summary of the emerging insights, for medical education, of the relatively recent field of cognitive neuroscience (Chapter 3). And in Chapter 7, Diane Kenwright and Tim Wilkinson address the thorny concept of 'quality' – how do we know what we're doing is any good?

One of medical education's evolving 'special interests' has been assessment. Indeed it is often involvement in professional assessment, either formative or summative, that first draws clinicians into the world of medical education. Chapters 20–25 recount the increasing sophistication of assessment instruments in medical education, how validity is ensured and standards are set, the growing acceptance of the need for programmatic approaches, and the perennial challenge in professional education of balancing assessment for learning and assessment for accountability.

It was Flexner's mentor, William Osler, who brought students and patients closer together through his educational philosophy that medicine was 'learned by the bedside and not in the classroom' [9, p. 188] and through the practical introduction of residency programmes. Both are now threatened by concerns over patient safety, expansion of medical

student numbers, regulatory requirements on working hours, and a staggeringly accelerated patient throughput. Patients undergoing gall bladder operations in Osler's day were in hospital for several weeks – the procedure now is carried out on a day-patient basis. At almost every stage of training, learners see fewer patients, do less to them, and, as a consequence, find themselves increasingly unprepared for practice [10]. This, as pointed out by Clare Morris in Chapter 12 and by John Launer in Chapter 13, requires new ways of thinking about work-based learning and the mediating role of the trainer or supervisor.

A related concern is patient safety. Medicine is not only faster-paced, it is also more hazardous. As Cyril Chantler has succinctly put it: 'Medicine used to be simple, ineffective and relatively safe. Now it is complex, effective and potentially dangerous' [11, p. 1178]. One of the responses to reduced opportunities for contact with patients and more hazardous interventions has been the widespread adoption of simulation across all fields and stages of medical education. The availability of sophisticated technologies now enables high-fidelity reproduction of complex patient scenarios. Students and doctors in training no longer need to carry out procedures for the first time on real patients – the skills of ophthalmoscopy, venepuncture, and catheterisation can all be learned in the skills laboratory. Full-immersion scenarios also offer the opportunity to work on non-technical areas such as team working, leadership, and situational awareness. However, questions remain about transfer to the authentic setting – an issue that is explored in depth by Alexis Battista and Debra Nestel in Chapter 11.

Growing concerns over patient safety have influenced not only the way medicine is practised – with the widespread introduction of protocols, checks, and audit – but also the degree to which doctors are now publicly accountable. In the UK, for instance, high-profile cases (such as Bristol [12], Alder Hey [13], Shipman [14], and, more recently, the Francis Inquiry [15]) have ushered in a new era of public accountability, while 2013 saw the introduction of relicensing for all medical practitioners in Britain, with regulators coming under increasing and critical pressure [16]. Patient safety issues also permeate undergraduate medicine. Protecting patients within a teaching and learning environment, while producing competent doctors who will maintain their knowledge, attitudes, and skills, is a major challenge for those who design undergraduate curricula.

Increasing accountability is just one facet of a new social compact with patients; a compact that is no longer based on blind and unquestioning trust but on true partnership [17]. As John Spencer, writing with Judy McKimm and Jools Symons, highlights in Chapter 15, we see increased patient involvement across the board in both teaching and learning, and also in decision-making about how medical education is organised, governed, and its resources allocated. Patients are now also intimately involved in the selection and assessment of both undergraduate students and postgraduate trainees, and feedback from patients is a routine feature of continuing professional development and reaccreditation processes.

One of the corollaries of the above is that there is a growing recognition of the need to professionalise clinical

teaching [18]. The pressures for this are channelled through professional bodies, but also arise from an increase in the expectations of students and doctors in training about the quality of the learning opportunities they are afforded. Clinical teachers and others with responsibilities for medical education increasingly look for academic support and accreditation of their expertise, and one of the target groups of *Understanding Medical Education* are newcomers to medical education, whether undergraduate or postgraduate, including those studying at certificate, diploma, and master's levels. As Yvonne Steinert describes in Chapter 36 – on faculty development – the professional credentialing of medical educators is a burgeoning industry in Europe and North America and reflects a more general trend of the 'professionalisation' of medical education. Professionalisation has produced a new breed of scholarly educators and, coming as they do from a bioscientific background, a desire for evidence-informed medical education practice.

This raises questions about the nature of medical education research and again, as is highlighted in the five chapters on research and evaluation (Chapters 27–31), we see worlds colliding. In a recent exchange in ASME's academic journal, *Medical Education*, a series of articles considered whether it is helpful to construe medical education as a medical or a social science [19, 20]. Monrouxe and Rees capture the essence of the debate:

Medical education research has benefited from its association with 'hard' medical science in that this has encouraged the engagement of clinicians in research activities. However, this gain is offset by a particular loss represented by the failure (of some) to understand that medical education is about people, and the way we think, act and interact in the world. Medical education research is not a poor relation of medical research; it belongs to a different family altogether [20, p. 198].

Curricula at the undergraduate level continue to evolve. Postgraduate medical education too is also in the throes of perpetual curricular change, with many specialties previously taught to implicit and informal curricula now articulating explicit and public curriculum statements of intent for the first time. Curriculum delivery is also challenged by the emerging possibilities of technology, many of which are addressed in a new chapter by Rachel Ellaway in which she explores the relationship between technology and learning (Chapter 10).

There are macro-political concerns too, around the responsiveness of medical education to societal needs [21]. In Chapter 35, Nisha Dogra and Olivia Carter-Pokras consider medical education's engagement with increasing diversity – considering patients and citizens as well as students and the workforce. Changing demographics are also profoundly influencing patterns of demand, with developed countries already experiencing the effects of an ageing population with complex health care needs. And across the increasingly interdependent world, we see a health inequalities gap that shows no signs of narrowing, with both emerging and developed health care systems struggling to cope [22]. Rising patient expectations and an ease of access to information present challenges not only in how care is delivered, but where and by whom. There are nostradamic predictions of future global shortages of health care workers [23] – an 18 million shortfall by

2035 – with little sign of a reversal of the maldistributive trend of doctors eschewing remote and rural locations in favour of large conurbations, and an imbalance of education and training outputs causing shortages in generalist and community-based specialties [24]. Managers within all health care systems are also waking up to the fact that the majority of their future employees already work in their health services and that significant investment may need to be diverted from training new and inexperienced practitioners into developing and supporting their existing workforce. Chapter 19 examines the complex issues that surround continuing professional development and there is an acknowledgement of the need to retain and support learners and staff, and provide support for their career decisions, in Chapters 32–34.

In Chapter 17, a new addition to this volume, Sylvia and Richard Cruess explore a central concern in medical education – the development of professional identity. But, what is 'a doctor' (or any other health care professional, for that matter)? With significant overlaps in knowledge and skills developing, what unique features does a doctor bring to the bedside or office, and what do we mean by a professional in the twenty-first century? Friedson argues that the professions, societal groups based on expertise, altruism, and self-scrutiny, will never disappear, but will merely shrink in size, as much of their work is taken on by a deprofessionalised operating core of medical technicians [25]. Others, such as Donald Berwick, disagree and see 'the reinvention of professionalism in a world on new terms of engagement; complexity, interdependence, pervasive hazard, a changing distribution of power and control and borne on the back of technology, distributed, democratised capacities ...' [26, p. 130].

What is certain is that at no point in the past has the medical profession had to engage so actively with these debates, and the question 'What are we educating for?' has never been so important, something that my co-editors, Bridget C. O'Brien and Kirsty Forrest, and their colleagues explore in Chapter 2.

## Scholarship and the Pursuit of Excellence

*Understanding Medical Education* began life as a series of free-standing monographs. The aim of the series was to provide an authoritative, up-to-date, and comprehensive resource summarising the theoretical and academic bases to modern medical education practice. It is now a best-selling textbook worldwide and although the majority of its expert authors come from Europe, Australasia, and North America, it offers a global perspective on contemporary practice and scholarship.

Boyer's expanded definition of 'scholarship' takes us beyond the narrow confines of research to consider the need to recognise and reward not only the scholarship of 'discovery' but also to recognise and reward the integration of new knowledge, its application to social practice, and teaching and learning [27]. This is a hugely important distinction for medical education, as the vast majority of medical educators are not researchers, nor indeed do they have the opportunity

to work across disciplinary boundaries to integrate new knowledge. What they can be, and often are, are excellent teachers and scholarly agents of change and improvement within medical education (see Chapter 37). This highlights a perennial problem in medical education, namely that funding for academic institutions – despite recent attempts to redress the issue [28] – is linked strongly to research outputs. Similarly, teaching in clinical settings usually plays ‘second fiddle’ to clinical productivity. This has led to a situation where both academic and service institutions continue to emphasise staff involvement in activities other than teaching, such that teaching remains largely unrewarded and unrecognised. This is a challenge that professional bodies such as the UK’s Academy of Medical Educators have set out to address [29].

Medical education is complicated, contested, and political. In a complex, uncertain, and networked world we need to make the best decisions about education, training, and development that we can and, as our final chapter outlines, engage in the leadership of change and improvement in an informed and intelligent way. For that, we need both scholarly medical educators *and* educational scholars. We hope that this book will continue to contribute to their development.

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