

Balancing academic medicine

Richard B Hays

Medical education needs recognition and strengthening through research

Modern medical practice relies heavily on research evidence to guide us towards predictable, safe outcomes of investigations and procedures that aim to improve the quantity and quality of life. As there are still substantial gaps in knowledge, researchers are supported to add to the evidence base. New technologies are proven to be (or not to be) safer or more effective. This continual reflection on practice and drive to expand options and reduce error margins is lauded as scientific progress.

1 Some current gaps in evidence in medical education

Current basic medical education programs, including prior degree requirements for graduate entry, are 5, 6 or 7 years long. Which is better?

Can selection procedures reduce the proportion of unhappy or unsuitable medical graduates?

How much anatomy, chemistry, pharmacology, psychology and other basic and biomedical sciences do medical graduates really need to know?

How can we measure the quality of teaching?

What is the impact on learner performance of poor versus good teaching?

Is it true that academic clinical groups provide better care?

What is in the "black box" of small group learning that makes its cost worthwhile?

What is good role modelling, and how can we facilitate it?

To what extent can e-learning replace other modes of delivery?

To what extent can skills laboratories replace real patient contact?

How often should experienced doctors be reassessed for registration?

Can poorly performing doctors be predicted or remediated? ♦

2 Strategies to achieve better support for medical education

Medical schools should be required to base curriculum development on medical education research wherever possible.

Medical schools should be required to spend a certain proportion of their teaching income on education research that supports their program.

Medical education units should be acknowledged as having research as well as service delivery roles.

National research priorities should include issues beyond the scope of individual medical schools, such as identified gaps in evidence on medical education.

Research funding bodies should establish panels for medical education research and allocate quarantined funds for proposals that address priority issues.

Medical education research should be awarded its fair share of research fellowships at PhD and postdoctoral levels.

Medical career structures should reward excellence in teaching and education research as much as other scholarly endeavours. ♦

On the other hand, modern practice in medical education relies mostly on experience, opinion and rumour as it strives to produce graduates to meet the increasingly high standards of the community, partly in reaction to well publicised medical errors.^{1,2} Until recently, medical graduates received biomedical science training and apprenticeship-style clinical teaching without defined national exit standards. The current trend is towards broader (and possibly shallower) curricula guided by contemporary definitions of medical practitioner roles, such as CanMEDS from Canada, Good Medical Practice from the United Kingdom and local adaptations.³⁻⁵ National licensing examinations are either in place or under consideration, and international curriculum frameworks and accreditation are being developed.⁶ We are amidst an expansion in medical education driven by a workforce shortage.

However, do we know how to achieve this expansion and maintain quality? There is a relatively small evidence base to support changes in medical education practice. The science of medical education has evolved much more slowly than the science of biomedicine. Lectures have been around for centuries, human dissection for about 500 years, and laboratory sessions for over 100 years. The only two real jolts to the conventions of medical education during the 20th century were the Flexner report, which standardised pre-clinical and clinical training phases because of concerns about a proliferation of small, lower quality medical schools in the United States,⁷ and problem-based learning, which was based on an attractive theory that case-based, integrated learning was more likely to be remembered when similar clinical presentations were encountered later. Neither change was based on strong evidence, and many years later there is still little education research evidence that any curriculum approach is better.^{8,9}

A fundamental problem is that the academic basis of medical education receives little recognition amidst complex agendas. From a health care management perspective, the main role of the health care system is the provision within budget of quality clinical care, and it is difficult to direct funding towards academic development. From a university perspective, medical schools are sources of resources and prestige, but mostly through research achievement. As a result, medical schools are becoming "two-team" institutions. First, there are the researchers, who charge ahead, based on well planned and supported ventures, aiming to "score" grants and publications, win competitions and attract attention, usually based on advances in biomedical and clinical sciences. Then there are the teachers, who stay in the background and guide the students. This is the team that earns the core, stable funding of the school and is responsible for seeing that graduates meet the broader curriculum objectives, but it receives little attention except during medical school accreditation processes. The focus on research means that the real rewards of medical academic life generally go to members of the research team.

Consider these questions: Why do some basic scientists who participate in education research decline to list that on their curricula vitae? Why are there apparently clear measures of

research success, but not of teaching success? How hard is it for exemplary teachers to gain senior promotion without research success? How many national honours go to people who teach rather than research? How many prizes are available to reward great teachers? Why are there “league tables” for medical schools according to research success, reputation and difficulty of entry (based on very high academic performance), rather than for teaching quality?

Just as clinical practice and research inform each other, so too do educational practice and research, and yet there are concerns about the variable quality and focus of recent research in medical education.^{10,11} There is a need to go beyond short term evaluation projects and to address current gaps in medical education research evidence, some of which are listed in Box 1. Most medical schools now have medical education units, but these are often seen as organisers of the teaching team, rather than contributors to a recognised academic agenda. These are missed opportunities, as medical schools manage large amounts of data about teaching and learning implementation, and could convert much of their teaching and learning activity to research without substantial cost. Medical education funding often underpins priority-driven research, and could more overtly support medical education research. The external funding environment could make medical education research more attractive to the research community. More medical academics could be trained in the methodology of education research, which differs from that of clinical and laboratory research, to increase research capacity. In summary, it is time for medical education research to enter mainstream research agendas and become a research priority for universities.

Unless we strengthen academic medical education, teaching and learning will continue on a relatively uninformed basis, and our aim to produce safer, more efficient doctors will be under threat. This strengthening requires high level intervention to promote a culture change in medical schools, facilitated by strategies such as those listed in Box 2. Even if all these strategies were implemented, the impact on support for biomedical research would be small, yet the potential reward would be high. We would know much more about what we are doing in medical education, and medical

schools could gain academic credibility not just through traditional indicators of success, but for doing what they were founded to do — to teach medical students well. After all, medical schools depend increasingly on their students’ fees.

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