

Literature Review: Trends in 21st Century Medical Education
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Introduction

This literature review aims to provide insight into the factors that are shaping, and the developments that are emerging in, medical education in the 21st century. Demographic trends demand that future doctors have expertise in treating the chronically ill and the elderly. Political and economic demands on the healthcare system have rendered the current shortage of primary care physicians more urgent, while also changing the venues and practitioners involved in healthcare. As scientific, technological, and pedagogical knowledge is updated, the medical curriculum is shifting to a model that prioritizes self-directed learning and critical thinking skills that can be utilized throughout a career and in the midst of an ever-changing field.

Healthcare Practice in the Modern World

Several key social, economic, and political issues affect the context of healthcare delivery and the demands on healthcare practitioners. Medical educators face evolving contexts that will alter the ways in which healthcare is delivered in the future, including increases in community based medicine; economic pressures to limit costs; the rise in cases of chronic and episodic illnesses; aging societies; increasing demand for end-of-life care; and the changing nature of the relationship between doctors and patients (Cohen & Ziv 2009; GMC 2011; Keahey et. al. 2012; Pugno 2010).

One specific trend with significant implications for medical educators and healthcare practitioners is the shortage of primary care physicians. Medical schools and organizations are concerned about the misdistribution of specialties chosen by medical students, which is exacerbated by the compartmentalization of medical knowledge into very specific fields of medicine. These factors lead to a lack of evenly distributed learning opportunities in clinical practice and hinder students' ability to connect medical practice to new trends in integrative science (CEHP 2010; Nutter & Whitcomb 2003; GMC 2011; Weatherall 2011). A shortage of primary care doctors portends negative implications for the future of the medical field, especially given the economic incentive for this specialty to take a major role in providing healthcare. Medical schools must consider ways to entice students to elect this specialty (Dezee et. al. 2012; GMC 2011; Pugno 2010).

Given the changing nature of the field, medical schools are recognizing the need to create competent practitioners and giving greater importance to issues of patient care, communication, and professionalism (Dezee et. al. 2012; CEHP 2010; Kennedy et. al. 2013; Mann 2011; Pugno 2010). Teamwork is also becoming an important aspect of medical education, since doctors are increasingly coordinating patient care with a variety of other healthcare practitioners, such as Physician assistants and nurses (CEHP 2010; GMC 2011; Mann 2011; Keahey et. al. 2012). Furthermore, given rapid advances in technology and science, medical students today are being trained to become lifelong learners and critical thinkers, giving them the ability to adapt and

adjust to the shifting demands of the medical field (Dezee et. al. 2012; CEHP 2010; Kennedy et. al. 2013; Yager 2011).

Technology and Medical Education

Technology has had a significant impact on the practice of teaching, and this is increasingly becoming evident in the field of medicine. New technological advancements like iPads are being incorporated into clinical training (Pappas 2012). Researchers suggest that medical trainees must become proficient in technology and adaptable to new technologies to enjoy a competitive advantage in the field (Srinivasan et. al. 2006; Pugno 2010).

New technologies have also affected the potential of the classroom. Medical educators can take advantage of the availability of curricular materials on the web and the potential to open the classroom to online participation, even to the extent that intra-university courses can become possible. (Srinivasan et. al. 2006; Yager 2011). Technology has not only changed the structure of the classroom, it also has implications for curriculum in certain fields; psychiatric training must enable students to deal with new diagnoses that may arise from a world increasingly dependent on technology, and therapeutic approaches that students learn may integrate technologies such as videoconferencing and access to databases (Yager 2011).

Theory and Practice in Medical Education

The recent literature on medical pedagogy draws attention to the practice and content of medical education. Some practices in current medical education that have been critiqued for failing to foster curiosity in students are: demands for increased efficiency, a culture of objectivity and overconfidence, and a top-down lecture approach that discourages students from questioning medical knowledge and incorporating their emotions into the learning process (Dyche & Epstein, 2011). Further, new theories are constantly arising in this field. One theoretical approach to medical pedagogy that has recently gained in popularity is Evidence Based Medicine, although it has been critiqued for its failure to account for complex diseases, their interactions, and unorthodox treatment approaches (Jones et. al. 2009; Cohen & Ziv 2009).

The dominant pedagogical approach in medical education has shifted from that of a top-down, hierarchical lecture, to instructional approaches that foster self-directed learning, relying on techniques including small groups and case studies (Dezee et. al. 2012; McMillin 2012; Kennedy et. al. 2013; Weatherall, 2011). These changing instructional practices have occasionally been accompanied by changing styles of assessment (McMillin 2012). Medical schools have also had to modify the clinical and scientific curriculum to reflect the changing emphasis on integrating clinical education earlier in the medical school curriculum, thereby evolving past the century-old standard established in the landmark Flexner report, which strictly separated science education and clinical education (Deeze et. al. 2012; Nutter & Whitcomb 2003; McMillin 2012; Weatherall 2011).

Medical schools have increasingly taken efforts to invest more care in their student bodies. The needs of medical students and trainees are increasingly being recognized, as academic programs become more considerate of their mental and physical health, leading to changes such as

restrictions on clinical hours (Dezee et. al., 2012). Also, given evidence of underrepresentation of students with low socioeconomic backgrounds, medical schools in the UK have increased efforts to recruit such students and to strengthen the quality of the education provided to students (GMC 2011). Medical schools are recognizing the need to provide professional development resources to their own faculty members and clinical directors, and many have established centers or institutes to concentrate on pedagogy (CEHP 2010, Nutter & Whitcomb 2003).

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