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COMMENTARY

Envisioning a global role for osteopathic medicine in the 21st century: Using Blue Ocean Strategy to promote osteopathic health care as the World's leader in healthcare education and do it more efficiently, effectively and at the lowest cost

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Abstract Twenty-first century medical education will be dramatically improved by our rapidly evolving understanding of how to more efficiently, effectively and affordably train future health care providers. The following describes a paradigm that uses Blue Ocean Strategies in training osteopathic physicians and thus, rapidly differentiates osteopathic medical education from contemporary approaches to medical education. By replacing the current medical education system with this model, osteopathic medical education is provided an opportunity to emerge as the standard for training future health care providers.

Introduction

Over the past decade, medical educators witnessed a number of developments likely to dramatically change the future of medical education. Principal

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among them are: 1) the world-wide 'Competencies' initiative, 2) 'Outcomes' oriented curricular management methodologies, 3) the increasing influence of 'Learning Sciences Research' in the construction of medical education principles, course design and instructional methods, and 4) increasingly sophisticated 'Instructional Technologies'. This manuscript briefly summarizes these developments and advocates Osteopathic medical educators to consider their utility in redefining 21st century Osteopathic medical education.

The competencies initiative

In the late 1990's, leading medical organizations in North America, Australia and Europe began arguing for a new, more focused approach to undergraduate and graduate medical education.[1–6] They sought for medical training programs to more clearly and concisely define the broad capabilities that medical graduates possess as they enter the practice of medicine. From an educational perspective, this represented a shift from education directed at the accumulation of medical information and the passing of norm referenced examinations, to instruction and assessment directed at enabling learners to perform specified tasks in a competence or criteria-referenced manner. While the competencies are worded differently from one country to another, they nonetheless represent general agreement in terms of competencies related to Patient Care, Explanatory capabilities (Biomedical Knowledge), Ethics/Professionalism, Communications and Interpersonal skills, and, the life-long ability to maintain and update (Research) knowledge and skills sufficient to both run their clinical practice and work effectively in a larger medical system.

Outcomes management systems

For decades, medical educators touted the development of 'new and improved' medical curricula but remained unable to provide evidence that in fact, their curricular initiatives produced improvements in clinically relevant capabilities.[7–9] It is increasingly suggested that a major contributor to this ongoing cycle of curricular change without improved outcomes is a lack of appropriate organizational/programmatic management systems.[10,11] There are a number of such management systems and they are often referred to as Outcomes Systems.[12] While each system differs from the others, common to most are: 1) initial efforts to define the discrete outcomes desired of both the learners and curricular initiative, 2) the use of evidence-based medical education literature to inform the selection of the curricular principles, course design and instructional methods serving as the framework for the curricular initiative, 3) careful consideration of the methods by which the new curricular initiative are implemented, and 4) selection and design of appropriate metrics and analysis to determine if the curricular initiative met its initial outcomes.

Learning sciences literature

The deficiencies of Discipline, Systems, and Problem-based curricular models are well documented.[13] However, there remains little evidence that learning sciences principles are now being used to establish course design and instructional methods appropriate for 21st century medical education. Three core evidence-based, learning sciences derived principles awaiting utilization and evaluation in the medical education setting are as follows:

1) Competence is problem and task-specific, and, more heavily predicated upon the development of knowledge relevant to the problem and task at hand than the development of generalizable intellectual skills,[14–16]
2) The development of problem and task-specific knowledge, and the intellectual skills needed to construct problem and task-specific knowledge bases, evolve in a hierarchically ordered manner,[17,18] and
3) Multiple problem and task-specific practice cases and feedback expedite the development of problem and task-specific knowledge bases underlying competence.[19,20]

Respectively, these principles suggest that 21st century medical training programs utilize course design guidelines wherein:

1) Problem and task-specific learning modules are used to largely replace discipline and/or systems oriented courses,
2) The 'hierarchical' development of problem and task-specific knowledge bases, and, the intellectual skills needed to construct these problem and task-specific knowledge bases, are core objectives of the curriculum, and
3) Multiple problem and task-specific practice opportunities and feedback are sufficient to