

Preface

Most ideas about teaching are not new, but not everyone knows the old ideas.

Euclid. Circa 300 BC

Medical education, the science behind the teaching and learning in medicine, has been firmly established as a separate discipline. Parallel to the advancement in medical science, medical education as a discipline has seen tremendous progress. We have reached a phase where we are not limited to understanding what is at fault in our education but we also know *how to correct these faults*. We have progressed from the role of problem-identifier to that of solution-provider.

The beneficial effects of such development are readily evident. Teaching and learning have become more scientific and rigorous, curricula are based on good pedagogical principles, and problem-based and other forms of active and self-directed learning are no longer viewed as an anomaly but are now considered to be the mainstream. There is a strong emphasis on evidence-based education. This is a time of great excitement and opportunity for anyone who is interested in teaching and learning in medicine.

Parallel to its spectacular growth, medical education, as a discipline, has become more specialized. The specialization has taken shape in many forms. There are educators with exclusive interest and expertise in medical education. The discipline itself has become further sub-specialized; there are experts in learning theories, curriculum planning, assessment and evaluation, and clinical education—just to name a few. In most of the leading medical schools, there are autonomous medical education units that lead the educational initiatives. There are several scholarly journals dedicated to medical education which are published regularly and enjoy a good readership base. Moreover, most of the clinical professional journals publish articles on medical education. There are also many authoritative books on various aspects of medical education written by renowned scholars and leaders.

Paradoxically, the rapid development and specialization in medical education has come with a price. The more developed the discipline has become; the more specialized and fragmented have become the books and publications on medical education. Many books are too intimidating and esoteric to meet the needs of general medical teachers. In contrast to the prolific publication trend in specialized aspects of medical education, there is a marked paucity of books written for the general reader in medical education. More importantly, there are few books that are easy to understand, portable, as well as affordable for the individual reader.

The issue of non-availability is evident from our interactions with our colleagues. Frequently, we engage our friends and colleagues in a passionate discussion about medical education and the benefits that they may get from knowing the science of teaching and learning. When we have managed to instill enough interest, our colleagues' response is typical—"It seems medical education is interesting. Can you name a book where I can read more about it?" Our defeat comes now. It is hard to recommend a book about medical education that meets all three criteria of understandability, portability, and affordability.

Therefore, in this simple non-intimidating book, we promise to tell the general medical teachers what they need to know about medical education.

We strive towards making the book a readable, jargon-free, precise yet complete guide to teaching and learning in medicine.

Medical Education as a Discipline

Although medical education benefits from the theory and practice in the field of general education, the unique content, curricular philosophy, teaching and learning methods, and regulatory and social obligation of medicine demand that general education philosophies and practices are applied with careful consideration of these factors. Additional teaching and learning theories and methods are also needed.

The broad discipline of medical education encompasses several sub-divisions including teaching and learning theories, instructional methodology, assessment and evaluation, clinical teaching, and continuing medical education. Besides these, medical education also covers biomedical ethics, health care economics, medical history, and other related fields.

Medical educators are usually medical scientists and clinicians with special interest and expertise in medical education. A medical educator may be someone who is (a) especially skilled in teaching, (b) a person trained in the educational theory and practice in the context of medicine, or (c) an administrator in education. The bulk of medical educators are teaching faculty who have developed supplemental training in the field. The discipline is further enriched by teaching faculty with primary training in education and who have then developed interest in application of educational principles and practice to medical education.

Reasons for Interest in Medical Education

Along with patient care and research, medical teachers are also entrusted by society and medical schools to groom their students to become successful physicians. Almost all medical teachers

are given this very significant responsibility without any proper training to become good teachers. Content expertise is a requisite but is not sufficient enough to become good teachers.

Teaching is also a *learnable skill*; this is not an inherent quality that we are born with. Most of us learn the craft of teaching by an arduous, painfully slow and inefficient process of observation of our peers or learning from our own mistakes. Thankfully, the process can be easily improved with proper understanding of a few educational principles and practice of the skills.

We also believe that teaching is a *pleasurable and self-fulfilling* activity. The joy of teaching increases as we master the skills.

Readership of the Book

The profile of the reader that we envision for the book is someone who is interested to know more about medical education but lacks a formal background in pedagogy. This is intended to be a core reading in medical education; not an exhaustive and authoritative reference to the topic.

The primary audience of the book is the general medical teachers from all disciplines and specialties. Both basic science and clinical teachers will benefit from the book. Junior and mid-level teaching staffs will find the book useful as well. It can be used as a faculty resource book for medical teachers. Organizers of medical education workshops may also use this book as a required text.

The book will be useful for teachers and educators from other clinical and para-clinical disciplines including nursing, pharmacy, occupational therapy, and physiotherapy. Although the book is written for medical specialties, educators from other tertiary education will find some of the content relevant and useful to their practice.

Benefits of Reading the Book

The book helps to develop a clear and basic understanding of principles of teaching and learning in medicine. The readers will

develop the requisite expertise and skill that are expected of a basic or clinical science teacher including instructional module design, teaching methods, student assessment, and clinical teaching. The readers will also appreciate the changes that are taking place in the field of medical education and the reasons behind the changes.

Most importantly, the book will help the reader to become an effective medical teacher.

Our Approaches

Two discernible approaches are generally noticeable on books on education. The first approach is to focus on the ‘why’ aspects—a theory based exercise that promotes deep understanding of the topic. The second approach is to target ‘how’ aspects—demonstrating the practicality and illustrating how the theory is translated into practice. We believe both approaches are valid and have merits on their own and we have tried to strike a balance between the two. Thus, the book not only shows what is important to do but also tells the readers why it is so.

To improve the readability, we have at times simplified the concepts and trimmed what we have thought to be redundant. We recognize this to be a deficiency but a necessary step to keep the content focused on the book’s original purposes.

Organization of the Book

The book is divided into several inter-related sections. The preliminary sections provide broad perspectives on medical education including an overview of medical education, historical perspectives, current trends and controversies, and teaching and learning theories. The section on curriculum examines the topic from the perspectives of individual teachers and provides a succinct discussion.

Subsequent sections are organized according to the ‘Learning Cycle’—an elementary concept in educational planning. The ‘cycle’ essentially demonstrates the relationship between the three key elements of teaching and learning: learning objectives, teaching

strategies to achieve the objectives, and assessment and evaluation to determine whether the objectives have been fulfilled. The following sections elaborate on each of these elements and cover educational objectives, instructional methodologies including clinical teaching and problem-based learning, and assessment and evaluation. Later sections elaborate on internet and research in medical education.

Each chapter generally starts with a set of objectives. The content evolves around the objectives. Tables and text boxes summarize and reiterate important points. Each chapter ends with a set of key points—a constellation of take-home messages.

The reference section at the end of the each chapter is intentionally kept brief. All the articles and books are easily available—either on the internet or through the local library. Admittedly, there are many more scholarly articles that we mentioned, but those that are not easily available we have not included. The reference section contains two types of articles. The first category includes articles that we have referenced and the second category is ‘further reading’—articles that we consider important but not referenced.

In each of the chapter, we have used examples liberally to help readers understand how the concepts may appear in real life. Most of these examples were taken from our own teaching and clinical encounters. But the basic message remains clear enough. There are unavoidable but necessary repetitions in some of the chapters. This is somewhat intentional so that a reader who wants to read a particular chapter is able to do so without much difficulty. Readers are also encouraged to refer frequently to ‘Glossary’ at the end of the book.

Conventions

Several conventions merit further elaboration. The terms ‘we’, ‘you’, ‘our’, are used to denote medical teachers. We have used the terms teacher, facilitator, faculty, instructor, and so on interchangeably. Students and learners are used interchangeably as well.

To keep a gender-neutral tone and to avoid awkward use of s/he we have used both male and female genders equally. Occasionally, we have also resorted to plural whenever we deemed it appropriate.

The term assessment is used primarily in the context of student assessment and evaluation is used for program evaluation.

We have developed a significant portion of the content from general education resources especially sections on teaching and learning philosophies and teaching strategies. There are convincing reasons for this. General educational resources are much more endowed with rich literature on teaching and learning philosophies and their applications. Although many of these are yet to be tested in medical education, this does not mean these are ineffective or inappropriate; but reflects the relatively new development of medical education as a discipline. Among the general education resources the most helpful was ERIC (Educational Resource Information Clearinghouse, *www.eric.edu*). Readers are urged to use the resource as well.

We know that there are shortcomings and mistakes in the book that we have not realized yet. If you happen to spot one, please drop us an email. We will acknowledge your effort in the next edition.

We are still learning to present the core themes of medical education to readers in a better way. We promise to take seriously any suggestion that readers may have. Meanwhile, we take unconditional responsibility for the remaining lack of clarity and mistakes.

Completion of the book marks the beginning, not the end, of your effort to know the subject. We are confident that you will continue to learn further about medical education, and join us for the betterment of teaching and leaning in medical schools.

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