



## Book Reviews

### **Innovative Simulations for Assessing Professional Competence: From Paper and Pencil to Virtual Reality**

ARA TEKIAN, CHRISTINE H. McGUIRE & WILLIAM C. McGAGHIE & ASSOCIATES

University of Illinois at Chicago, Chicago (1999)

254 pp., ISBN 0-9671689-0-2, US\$30.00

This unique book, originating in the historical nexus of simulation in medical education, invokes a string of descriptors rarely used in medical education—fascinating, insightful, and almost poetic in parts. The authors lead the reader through the many historical nooks and crannies of the use of simulation in professional assessment. Even the preface, with its reference to the use of professional examinations in the Ch'in Dynasty, through the history of the legal and political actions leading to the evolution of professional licensing bodies in the United States, makes fascinating reading.

This broad historical stroke sets the stage for an equally broad treatment of simulation. While it would have been easy for the authors to stick to the subject they know best—clinical simulations—and lean heavily on their 30 odd years of experience as leaders in the field, they have chosen to offer us a much more eclectic array. We have descriptions of the use of computer design problems in architecture, simulations on law, military battle simulations, and the use of cockpit simulators in aviation. In fact, one of the neatest descriptions of the emotional impact of simulation is offered by Christine McGuire when she described her first encounter with a driving simulation as a teenager at the Chicago World's Fair in the 1930s.

Once you get into the book a bit further, it is never quite clear who is its intended audience. It is clearly not a “how-to” book to guide readers through the steps in writing a PMP or creating an OSCE station. Nor is it an academic source document, with an extended bibliography. In other words, its goals are unstated, its audience unclear, and its relevance uncertain. Yet, as I peruse the chapters, this seems to matter less. After all, many of the books I remember best, and those that most profoundly influenced me, had no goal or aim other than to inform or enlighten.

And so it is with *Innovative simulations*. The examples run the gamut of history from “the war game simulations of Wei-Hai, which originated in China about 3000 years ago” to military simulations which foreshadow the new millennium (Does it seem that simulation begins and ends with war? What a pity!).

But to cast this as a coffee table book to be prized primarily for its entertainment value does it a disservice. There is much of substance as well. Perhaps most useful are the overview chapters, such as the chapter on assessing knowledge and skills (Chapter 9) by Issenberg and McGaghie, which reviews the range of possible simulations from most basic to most complex, the chapter on measurement issues by Norcini, and the insightful treatment of philosophical and ethical concerns by Tekian.

There are some weaknesses as well. I found the chapters describing particular demonstrations of simulation technology, whether the CBX project by Clyman, the Medical Council of Canada licensing examination, or the description of new technolo-

gies in medical informatics by Satava, the least useful. But then, that might be an issue of personal taste. I have never found other people's descriptions of their approaches to a problem of much use, whether it is a new curriculum, a new computer simulation, or a new approach to evaluation. Others apparently find such demonstrations helpful. Second, the book suffers from the problem of unevenness that is inevitable with edited volumes. Not every author will warrant a Pulitzer Prize. Finally, and more substantially, I found some of the treatments somewhat uncritical and "gee whiz." As an example of the former, the discussions of OSCE development frequently refer to the development of checklists, and appear to ignore a literature, now a decade old, which consistently demonstrates the superiority of rating scales. An example of the latter is the chapter on medical informatics, which drags out all the "gee-whiz" cyber-clichés, including, of course, scientific revolutions and paradigm shifts. The author must be a surgeon. Every time "Surgery" is mentioned, he puts it in capitals. And he trots out a potpourri of "glimpse into the future" demonstrations of the kind that have kept popular science on the newsstands for decades, with nary a reference to the cost-effectiveness of these ventures or their impact on economically stressed health care systems.

But these minor defects do not detract from a book that can rightfully claim a unique spot in the medical education literature. Books in our field are rare; books which have literary, scientific and educational merit are rarer still. This is a good read.

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### **Doctor & Patient: Exploring Clinical Thinking**

KEN COX

University of New South Wales Press, Sydney, Australia (1999)

304 pp., ISBN 0-86840-505-1, RRP\$39.95

Ken Cox is clearly a dedicated teacher and a reflective physician who has given a great deal of critical thought to the topic of clinical thinking and grounded his discussion of it on an extensive review of the research literature. There are few, if any, topics in the broad domain of clinical thinking around a patient problem that Cox does not include in this volume. However, rather than a massive effort to integrate the research literature, he clearly states that his purpose in this book is "to provoke deeper thinking among clinical teachers and their trainees, but still be intelligible to lay readers interested as 'consumers' in how their doctor thinks." He accomplishes this goal through a highly accessible writing style that embeds sometimes esoteric concepts in the context of practice and patient communication. His emphasis is always on practical implications for teachers, learners, and practitioners rather than theoretical development for researchers. This is particularly clear in his inclusion of numerous dialogs among teachers and students regarding these issues.

Cox organizes the 304 pages of the book into three phases: "Sorting out the

problems,” “Working out what is wrong,” and “Deciding what to do.” Within these large sections are numerous chapters that investigate various aspects and perspectives on clinical reasoning. Cox describes a wide range of research literature and integrates it into discussions of: patient goals in seeing a physician; how physicians do and should elicit information from the interview; and how patient, physician, and health care system interact to influence clinical thinking. He weaves together such varied topics as formal decision analysis, reasoning heuristics and biases, the cognitive basis of knowledge, the impact of uncertainty, lay and physician beliefs and how these interfere with patient satisfaction with the interaction, among others.

The enormous scope of the material Cox includes in this book is impressive. Organizing such a large body of material is challenging, and he has selected a strategy that enables most of the chapters to stand on their own, without reference to other parts of the book. This strategy results in some degree of repetition, particularly in the larger issues of physician–patient interaction, communication, information gathering and integration, and clinical reasoning. This repetition also produces difficulty in determining in which chapter one should look for Cox’s treatment of any given issues, say, formal integration of numerical descriptions of information. Still, this book is an excellent overview of the science and art of clinical thinking that is very easy to read and very involving. It is clearly a review of current thinking rather than an effort to break new ground, although his treatment of motivation and affect in clinical thinking provides many excellent issues that deserve careful research. Because no familiarity with the research literature is needed, this book is useful to a wide audience of students, house staff, and faculty interested in teaching about clinical reasoning and understanding it in the context of daily practice.

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### **Problem-Based Learning in Medicine**

TIM DAVID, LEENA PATEL, KEITH BURDETT & PATANGI RANGACHARI

The Royal Society of Medicine Press Ltd, London (1999)

105 pp., paperback, ISBN 1-85315-430-X, £14.95

Problem-based learning (PBL) has undoubtedly become one of the more popular curricular innovations in the global medical education community. While many comprehensive books have been written about this innovative approach to learning, not as much effort has been devoted to orienting students and tutors to its concepts and principles. This book is one such attempt to provide a simple, straightforward and basic account of PBL for this particular audience. *Problem-based learning in medicine* is really a practical guidebook intended for teachers, students and those prospective students who are trying to decide whether to choose a school that features PBL or one with a more traditional medical education program. It is a “how-to” book for those who are not familiar with this educational approach.

The compelling story of Celestin Freinet, a physically handicapped primary school

teacher in France, serves as the refreshing introduction to the book. By describing Freinet's attempts at innovation and ingenuity in education in the early 1920s, the authors introduce the central principles of problem-based learning, that is, promoting active learning by giving students an opportunity to explore issues, identify learning tasks and evaluate progress and outcomes.

The book consists of 10 short, well-written chapters. The first three chapters provide a brief introduction to PBL, describe how it works and how it fits in with adult learning strategies. Chapter 4 examines the design of problems and trigger materials, while Chapters 5 and 6 outline how PBL groups work and describe the various formats of assessment in PBL. Chapters 7 and 8 provide practical advice to students making the transition from a traditional school education to PBL and also to teachers who wish to help students adapt and cope with the demands of the more learner-centered PBL course. The book concludes with a brief discussion of the possible pitfalls of PBL and ends with an enthusiastic look at expectations for PBL.

Throughout the text, the authors draw on examples and illustrations from a number of renowned medical schools that feature PBL, including McMaster in Canada, Maastricht in the Netherlands, Newcastle in Australia and, of course, Manchester University, where the authors taught. While this book should be particularly recommended as an introduction or orientation reading for students and teachers at the medical school at Manchester University, it should also be considered a valuable quick reference for medical students and PBL tutors in other parts of the world.

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