Book Reviews
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The application of computer technology to health care settings brings with it the same promises of efficiency in operation, ease of data collection, and accessibility of accurate information for decision making that it brings to any work environment. But the use of computers in health care raises a number of strikingly unique ethical questions as well. As computers become more ubiquitous in health care settings, worries about the privacy of computerized medical records have become commonplace, questions about the legal and moral implications of computer-assisted decision making have begun to be voiced, and concerns about how to interpret the information that computer analyses can provide have become increasingly important.

In Ethics, Computing, and Medicine, Kenneth W. Goodman has assembled eight essays that deal directly and intelligently with these very questions and raise a number of important related issues as well. Goodman bases the preponderance of the volume on work that grew out of a session that he organized on “Computers and Ethics in Medicine” at the 1992 annual meeting of the American Association for the Advance- ment of Science, supplemented by essays from colleagues at Carnegie Mellon University and the University of Pittsburgh. Despite the time interval, the material contained in the volume is extremely contemporary, in large part because the focus is on the fundamental ethical and policy issues raised by the application of computer technology to health care settings rather than a reflection about the particular computer applications themselves.

These fundamental ethical dilemmas cluster around three different but related areas in medical computing. First, because computers serve as particularly effective pieces of technology for storing data and allowing its easy retrieval, the use of computers for collecting and retrieving personal health information raises significant concerns about privacy and confidentiality. Shari Alpert’s chapter “Health Care Information: Access, Confidentiality, and Good Practice,” provides a careful delineation of the issues of confidentiality and privacy, encompassing perspectives that include not only patients, but also providers, insurers, and payers for health care. Second, ethical concerns resulting from intelligent computing, or the use of computers as decision-support tools is explored in Randy Miller and Ken Goodman’s chapter on “Ethical Challenges in the Use of Decision-support Software in Clinical Practice.” Miller and Goodman provide in this chapter an excellent discussion of the varying ethical challenges presented by the use of computers for simple “reminder” functions (e.g., health maintenance visits) versus fairly sophisticated uses of computers in helping practitioners make decisions about patient care. Implicit in Goodman’s subsequent chapter, “Outcomes, Futility, and Health Policy Research,” are the ethical questions raised by whether relying on the “expert systems” built into computer-assisted decision-making tools alters the ethical or legal obligations of physicians. Finally, Goodman devotes considerable attention in a chapter he authors to both methodological and ethical problems inherent in meta-analysis. His discussion is particularly interesting because it recognizes two keenly different ethical challenges in meta-analysis—the relationship between randomized trials and meta-analysis (an issue of consent) and the application of the results of meta-analysis to patient care (an ontological issue, asking the question of how we know the truth).

The entire volume has considerable strengths, with compelling essays by Terrell Bynum and John Fodor on “Medical Informatics and Human Values,” John Snapper on “Responsibility for Computer-Based Decisions in Health Care,” and James Anderson and Carolyn Aydin on “Evaluating Medical Information Systems: Social Contexts and Ethical Challenges.” Ken Goodman should be credited with ensuring that the highest standards in conceptual approaches to the topic and in overall rhetorical style are maintained. Every one of the chapters included in the volume is well conceived and well written. Each is accompanied by an extensive list of references that demonstrates the breadth of thought that went into the book’s construction. Goodman himself is a writer of considerable power and persuasion. His introductory chapter to the volume is an excellent synthesis of the major issues surrounding the ethical uses of computer technology in medicine, and his concluding remarks on meta-analysis demonstrate that he is keenly aware of the ways in which the uses of computers will continue to raise compelling ethical questions.

In fact, Goodman’s conclusion to the chapter about meta-analysis could be paraphrased to serve as an excellent summation for the issues raised throughout the volume:

It is often difficult to separate conceptual and technical issues from ethical ones. The latter are shaped by the former. To the degree that we are unsure of any technology’s accuracy, we must confront the problem of when, if ever, it is ethical to apply its findings to patient care or public policy.

Most of us have come to have great confidence in computers as tools, and we have a tendency to accept the output of computer programs with little critical analysis. Goodman’s
volume, however, cautions us to consider carefully when and how the use of that tool provides us with reliable information and to consider the circumstances under which the information gained can really direct us to make informed decisions. The book is a timely and important contribution to the literature about medical ethics, health care policy, and information technology.

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As medical curricula change what, how, and where medical students and residents are taught, the role of the physician-teacher must change as well. This book attempts to provide both theoretical and practical guidance in the development of effective teaching in the context of medical education by exploiting and extending the assumed patient teaching skills already possessed by physicians. Its major underlying assumption is that teaching is a form of communication and that patient communication skills, which physicians use on a daily basis, can be extended to improve communication, and consequently the learning process, with students and residents. The authors discuss several specific communication skills in the context of patient care and translate these skills into the medical teaching sphere.

This book relies on the theory of adult learning in its recommendations for the treatment of students at all levels. The major assumption of adult learning theory is that learning is a collaboration between learner and teacher, with each assuming responsibility for the process and each treated with equal respect. Individual differences in both learning and teaching styles are recognized and accommodated when possible. Adult learning is more learner-centered than teacher-centered and more active than passive. Thus, traditional teaching methods such as the mass lecture do not typically serve the adult learner well, although they may have their place, and mentoring activities and encouragement of independent problem solving become more important. Providing a wide repertoire of problem-solving experiences with proper guidance and supervision is seen as the most valuable and effective tool for medical education.

Because of the orientation toward adult learning, teaching is increasingly more oriented to small-group learning, whether in the classroom or at the bedside, and demands more from both students and teachers than the traditional approach. Although part 1 concentrates on general communication and teaching principles and theoretical issues, part 2 provides very practical and specific guidelines, with examples, for translating these general principles into daily teaching experience in five settings—lectures, group discussions, teaching rounds and morning report, bedside teaching, and ambulatory teaching. For each teaching setting, both general strategies and very specific, concrete tips are provided.

Several themes recur across all teaching settings:

1. Although the learner bears some responsibility, it is the teacher’s role to employ techniques that engage and maintain the learner’s interest and attention. This priority includes attention to affective learning needs as well as cognitive ones.
2. The teacher must make a conscious effort to make thought processes and decision-making strategies explicit and visible to the student.
3. Feedback is a necessary part of the learning process and must be well timed and sensitively delivered.
4. The most powerful tool available to the physician-teacher is role modeling. The authors’ ultimate advice to physician-teachers is, “If you treat your residents and students as you would have them treat their patients, you will free them to do their best.”

This book has several strengths. Its emphasis on adult learning leads to some very practical strategies to improve medical education in general and the performance of physician-teachers in particular. It emphasizes the necessity of both a supportive atmosphere and honest, timely feedback concerning the student’s performance. Its advice allows for differences in styles and preferences of both teachers and learners. A distinction is made between cognitive and affective learning objectives, and the importance of each is described. It provides concrete strategies to address several teaching dilemmas, including the teaching of problem-solving skills. It specifically addresses the issues involved in transferring the teaching process to the ambulatory care setting. On the other hand, part 1 is dry and overuses diagrams and cartoons to illustrate marginally useful concepts. More important, the teaching of two important topics in the rapidly changing medical practice arena—shared decision-making and evidence-based medical practice—is addressed only minimally and implicitly.

In summary, this book provides an overview of adult learning theory, applies this theory to medical education, and aims to help physicians use communication skills in giving patient care, and adapt these skills in educating students and residents. It also provides some general strategies and some very concrete suggestions for applying these principles in teaching practice. These strategies are accompanied by specific familiar examples and are applied to the variety of settings in which medical education occurs. The book also recognizes the patient’s needs as paramount in the teaching–learning equation. Suggestion: Read part 2 first.

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Professional education, including medical education, seems to be under constant pressure to redefine its goals,
change its instructional methods, and assess the employ-
ability of its graduates. Recent publications from Curry and
Wergin and Boyatzis, Cowen, and Kolb convey the
same message: higher education (colleges and univer-
sities) should adapt to the needs of the changing Ameri-
can/Western workplace. Globalization of business, rapid
technological developments, and a new intensity of com-
petition are considered as economic developments for-
cing higher education to deliver a different type of gradu-
ate prepared for the coming era. It is widely recommended
that professional education should move from develop-
ment of knowledge toward the use of knowledge, from
teaching isolated skills to using skills in professional con-
texts, and from delivering scientific knowledge toward
developing the ability to learn. Clearly, these issues are
not new. Calls for change in medical education have been
persistent from the very moment its knowledge base
started growing, resulting in a wide range of highly de-
veloped disciplines. McCaughey mentioned a whole parade
of reports about the need for curriculum reform in medical
education starting with the Flexner Report (1910) and
ending with the ACME–TRI Report (1992). Again the
message is basically the same: If medical education wants
not to be left behind in the changes in professional medical
practice, most teaching practices in medical education are
out of sync. The connection between theory and practice
during the preclerkship curriculum is one that deserves
major attention.

The importance of establishing a good connection be-
tween theory and practice has been recognized by medical
schools advocating the use of problem-based learning or ac-
tion learning. These programs focus on training students
to understand real-world problems or patients’ cases in the
context of medical practice. Equipping graduates with prob-
lem-solving skills and preparing them for life-long learning
are regarded as basic educational goals of problem-based pro-
grams. More recently, this method has been applied in a vari-
ety of other professional schools.

It takes only a small step to connect these developments
with the search for new methods of formal instruction in col-
leges and universities. Experiential Learning in Higher Educa-
tion provides a timely review of the literature with suggestions
for program design, curriculum development, and the program
in use. Experiential learning is closely related to educational
methods like problem-based learning and action learning that
have been developed in professional education. The difference
lies in its broader scope and the general domain (higher educa-
tion) in which it is applied. Jeffrey Cantor defines experiential
learning as “learning activities that engage the learner directly
in the phenomena being studied. This learning can be in all
types of work or service settings by undergraduate and gradu-
ate students of all ages” (p. 1). Small group projects, role plays,
oral histories, or other action-oriented teaching strategies are
considered as experiential learning. Cantor’s book describes
this approach as applied to professional education (such as sci-
ence and engineering), but also dedicates a chapter to examples
within the arts, humanities, and social sciences.

What makes this book interesting is its attempt to make a
strong connection between educational theory and how
things may work out in educational practice. It starts with the
most basic question faculty may ask: Why change? This is
but one of the rhetoric one hears in promoting experiential
learning activities for our students. (p. 4)

Cantor seeks the answer in the economic changes taking
place in the American workplace. He contends that rapid
changes in American society (more nontraditional learn-
ers, growing cultural diversity, and its economic structure)
ask for graduates trained in teamwork, social skills, deci-
dision making, and continuous learning. The issue is not how
to teach yesterday’s knowledge today, but how to teach to-
morrow’s knowledge today. This implies new university
programs, moving away from teaching factual knowledge
and techniques. Their aim should be toward developing
students’ abilities to make their own choices, take on their
responsibility, to monitor the quality of their professional
skills.

This monograph describes styles of experiential learning
in different programs. For example, chapter 2 is en-
tirely devoted to the “Arts and Humanities and the Social
Sciences.” Cantor first reviews the goals of liberal arts cur-
ricula showing that these curricula strive for lofty goals
such as developing critical thinking skills, empathy and clarifying
personal values and integrity. The question seems obvious—What kind of pedagogy may be identified
to educate students and enable them to meet these goals?
The traditional approach addressing this issue lies in look-
ing for contents. Contrarily, Cantor advocates experiential
learning activities, to make content more realistic and rele-
vant for the student. Chapter 3 pays attention to the profes-
sional and technical disciplines. Although the part on med-
cal education and the health care professions is very
limited, its strength lies in the examples from other profes-
sional fields (e.g., law, business, engineering) struggling
with similar problems.

The added value of Cantor’s review is that he is not de-
scribing the literature on experiential learning from a purely
scholarly perspective. He pays attention to everyday con-
cerns of faculty members interested in changing their teach-
ing practice. Every chapter contains a section on implementa-
tion issues, written in a way that is very recognizable for
faculty. For example, he admits that faculty in the profes-
sional and technical disciplines:

Do not hold the beliefs of their academic subjects’
counterparts about the inappropriateness of experien-
tial learning in their classrooms. Much to the contrary.
These faculty support experiential learning. Their con-
cerns tend to be more in the areas of effective supervi-
sion and control of the learning processes through the
class room and field experiences. (p. 55)

Cantor’s monograph is part of the ASHE–ERIC Higher
Education Reports series. This report is a review on how exp-
eriential learning can make a contribution to the formal aca-
demic program. One should read this monograph as a review
and not as a “how to develop experiential learning methods
for my program” book. Clearly, the monograph helps by de-
ciding what kinds of questions need to be answered before including experiential learning activities in your courses. However, readers looking for detailed blueprints on how to design experiential learning activities will be disappointed. If it is used like a review, it may be of much help for faculty looking for literature about how to establish a better connection between theory and practice, under conditions of scarce resources and so on. In my opinion, it is especially beneficial for those teaching theory-dominated undergraduate courses or (bio)medicine courses. Faculty, trying to develop new ways to meet student learning needs, may find helpful ideas and literature references.

However, as one of the advocates of problem-based learning, the thing that struck me is that Cantor’s monograph does not cite literature about problem-based learning or action learning. Nor does it refer to the publications in the field of medical education dealing with the design of internships and skills training. This is quite remarkable, because the author expresses the same concerns about college and university education as many involved with innovative medical education.

References


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