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Book Review

Problem-Based Learning in Clinical Education: The Next Generation

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Bridges, S., McGrath, C., & Whitehill, T.L. (Eds.). (2012). *Problem-based learning in clinical education: The next generation*. New York: Springer. 251pp. ISBN 978-94-007-2514-0, \$139.00 (hardcover)

Medical schools are the pioneers of problem-based learning (PBL). Since the advent of PBL in the late 1960s, dramatic changes have taken place in the landscape of education. The constructivist paradigm as reflected in PBL has become a significant influence on today's educational research and practice. While numerous studies have been conducted over the years to examine PBL from different angles, it is a good time to revisit medical education and take a systematic look at how PBL is being implemented and investigated in today's medical schools. This edited book, *Problem-Based Learning in Clinical Education: The Next Generation*, serves such a purpose. The book is unique in that it originated from the University of Hong Kong, where a curriculum overhaul has taken place to implement PBL. Further, appealing to a global audience, PBL scholars and practitioners from all over the world contributed to this edited volume.

The book has a collection of 14 chapters. The first chapter by Hmelo-Silver and Eberbach provides the readers a comprehensive overview of the theoretical underpinnings of PBL and offers the necessary lenses to examine and interpret the subsequent chapters. The last chapter by Bridges, Whitehill, and McGrath summarizes the research directions in PBL based on the work presented in this book.

The main part of the book examines PBL from three different perspectives: learning outcomes, new technologies, and the inside processes. Five chapters focus on different learning outcomes of PBL. Chapter 2 explores the delayed outcomes of PBL by inviting two previous students to reflect back on their PBL experience 16 years ago and discuss the impact of this experience on their later career. Chapter 3 examines board-exam per-

formance by comparing PBL and traditional dental students' exam scores over six years. While it is impressive that the PBL students consistently outperformed the traditional students in their basic science exam scores, readers would benefit from a more in-depth discussion of the possible reasons. Chapter 4 compares students' perceived competencies in their profession as the result of a complete or a hybrid PBL curriculum. Chapter 5 examines the influence of two PBL curricula on three different outcomes: (a) students' understanding of PBL, (b) approaches to learning, and (c) exam performance. The study highlights some misalignment between students' understanding and the design intentions of PBL. Chapter 6 addresses a unique construct, learning styles, as the outcome of a three-year PBL curriculum.

Three chapters are dedicated to the topic of new technologies for PBL curriculum design. In light of technology's affordances of multiple modalities, Chapter 7 describes an interactional ethnographic study to understand how different text modalities serve as learning tools to support students' knowledge construction across the PBL cycle. While related to technology, this chapter seems to fit more in the next section of the book with a focus on the processes of PBL. Chapter 8 reports an endeavor to conduct PBL by having students from two different disciplines and separated by time and location to collaborate with each other. While a set of social networking tools are described, readers could benefit from an illustration of how the tools were used to facilitate different phases of the PBL cycle. Chapter 9 compares two different modalities of problem presentation, paper or video, in their influence on the PBL process.

The next four chapters explore the tutorial processes during PBL. Chapter 10 uses discourse analysis and interviews to identify important factors that influence the first-year students' adaptations to the PBL environment. Chapter 11 uses conversation analysis to demonstrate how silence may serve as a productive mechanism to facilitate the PBL process. Chapter 12 examines group dynamics from the perspective of the first-year PBL students. The findings highlight the importance of social elements in group dynamics. The last chapter of this section takes a closer look at the actual implementation of PBL and points out the importance of tutors' understanding of PBL structure and processes for effective facilitation of PBL.

Overall, this book features a well-rounded collection of studies examining important topics in current clinical education, although the section on new technologies could be strengthened by including studies on more technologies, e.g., different kinds of simulation technologies that are heavily used in clinical education.

The focus on research is a clear strength of this book. PBL researchers can reference the variety of research methodologies featured in this volume to examine both the processes and the various outcomes of PBL. The works in this book represent a wide range of medical disciplines, academic levels, and PBL approaches with an emphasis on the

implications from research. Hence, PBL practitioners will also find this edited volume very useful in informing their curriculum planning and implementation.

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