

Book Review

Problem-based Learning and Pedagogies of Play: Active Approaches Towards Self-directed Learning

Havenga, M., Olivier, J., & Bunt, B. J. (Eds.). (2024). *Problem-based learning and pedagogies of play: Active approaches towards self-directed learning*. AOSIS Books. ISBN 978-1779952783 (Paperback), \$57.65, 318 pages.

Technology and engineering education (TEE) textbooks dedicated to instructional strategies and methods are rare. The Council on Technology and Engineering Teacher Education (CTETE) published two yearbooks on instructional strategies (Helgeson & Schwaller, 2003; Kemp & Schwaller, 1988) and Petrina (2007) authored the more comprehensive *Advanced Teaching Methods for the Technology Education Classroom*. Technology and engineering education has changed immensely since the release of these books and TEE teachers and teacher educators should add more contemporary sources for professional development. *Problem-based Learning and Pedagogies of Play* is such a text that offers depth, not breadth, in several key pedagogies useful for TEE. Havenga, et al. (2024) offer an in-depth exploration of problem-based learning (PBL) and various pedagogies of play (PoP). Comprising ten chapters, the book provides theoretical foundations, practical applications, and critical analyses of PBL and PoP, making it a valuable resource for teachers and teacher educators looking to implement these methodologies. The authors' thorough approach through detailed discussions, practical examples, and the inclusion of diverse strategies make this book a rich resource of how PBL and PoP can be applied in educational settings that promote self-directed learning.

The central premise of the book is that integrating problem-based learning and pedagogies of play can significantly enhance educational outcomes by fostering meaningful, student-centered learning experiences. This thesis is clearly stated in the introductory chapters and is subsequently supported through various examples and theoretical discussions. Chapter authors provide substantial evidence from research studies and practical applications to demonstrate how PBL and PoP can be effectively implemented.

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The primary aim of the book is to provide educators with a comprehensive understanding of PBL and PoP and offer practical strategies for their implementation. This aim is well-achieved through the book's structured organization, which moves from foundational theories to specific applications. Each chapter builds on the previous ones, maintaining a coherent narrative that aligns with the authors' stated goals. The authors assume that readers understand educational theories and are familiar with current educational challenges. This assumption is generally effective, as it allows the authors to delve deeper into complex topics without oversimplifying them. However, some readers may find certain sections challenging if they do not have prior knowledge of the subject matter.

The material is presented effectively, with each chapter providing a balanced mix of theory and practical examples. Chapter one provides a foundation of problem-based learning and chapter two focuses on pedagogy of play. Chapter three situates PBL and PoP within the domains of learning and chapter four provides a conceptual framework for using PBL and PoP in self-directed learning. Chapters five through ten provide research, case studies, and classroom applications that enhance the book's credibility and makes the concepts more relatable. However, some chapters could benefit from additional examples to vividly illustrate the points and chapter nine includes material on using drama in an English language classroom that may not be appropriate for technology and engineering educators.

The conclusions drawn in each chapter flow logically from the discussions and evidence presented. The book effectively ties together its various strands, culminating in a cohesive argument for integrating PBL and PoP in educational settings. One of the assumptions Havenga, et al. (2024) make is that experiential and student-centered learning approaches are superior to traditional methods. This assumption is woven into the book under the idea of making students self-directed learners. The philosophical approach is grounded in constructivist and progressive educational theories, which emphasize active learning and the role of the learner in constructing knowledge.

Each of the chapter authors seems motivated by a desire to improve educational practices and outcomes, yet their perspective is primarily informed by contemporary academic research and trends, which may introduce some biases. For instance, the emphasis on progressive methodologies might overshadow the potential benefits of traditional approaches. However, the authors acknowledge the challenges and limitations of PBL and PoP, which adds a layer of balance to their arguments. Overall, the text fits well within the broader discourse on innovative educational practices through the explanations and evidence-based discussions.

From a structural standpoint, the book is well-written, clear, and engaging for an edited volume. Quotations are effective and graphical material is well-integrated and enhances the text. The footnotes and references are

comprehensive and useful, providing readers with additional resources for further study. The index is well-organized and user-friendly, making it easy to locate specific topics. However, some sections could benefit from more accessible language to ensure that readers with varying levels of expertise can fully engage with the material.

Technology and engineering educators seeking to enhance their teaching practices through innovative methodologies will find Havenga, et al. (2024) a valuable resource. The comprehensive coverage of PBL, PoP, and self-directed learning offer a rich foundation for implementing these strategies that go beyond general teaching methods texts. Havenga, et al. (2024) offer practical and theoretical insights that enhance the minds-on/hands-on learning in technology and engineering education. They provide meaningful research-based practices (e.g., problem-solving, robotics, and computational thinking) that are central to contemporary technology and engineering education practices (ITEEA, 2020).

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