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## Editors' Introduction: Building and Serving a Problem-based Learning Community

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## **Editors' Introduction: Building and Serving a Problem-based Learning Community**

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*Alexius Smith Macklin*

Welcome to the first issue of the *Interdisciplinary Journal of Problem-based Learning (IJPBL)*, a quarterly, peer-reviewed, online periodical dedicated to issues concerning both the theory and the practice of PBL. Although multiple descriptions and definitions of PBL abound in the literature, their commonalities define its essence. At its core, a problem-based approach is designed to help students achieve two goals: (1) to acquire a deep understanding of specific content knowledge, and (2) to develop problem-solving and higher-order thinking skills. While Savery (this issue) provides a description of PBL as practiced in its "purest" form, *IJPBL* is committed to publishing articles that fall under the broad umbrella of problem-based methods including project-based learning, case-based instruction, inquiry learning, and so on. Our hope is that the journal will provide information and evidence-based suggestions for those who wish to advance their understanding of PBL, as well as for those who are considering using problem-based approaches for the first time.

One may wonder why, with so many educational journals already available, we felt the need to start one more. However, given the attention that PBL has received over the last 40 years, maybe it's more fitting to wonder why there wasn't one already. Two years ago, when Alexius Smith Macklin, Joseph (Mick) LaLopa, and Ayfer Alper began exploring options for publishing interdisciplinary work dedicated to the theory and practice of problem-based learning, they discovered few venues for sharing their research with others. More importantly, the many educational journals that were available did not seem to focus on issues of teaching and learning in disciplines other than the specific one to which each was dedicated. This initial discovery was later supported by the results of a needs assessment conducted at the first annual conference of the International Society on the Scholarship of Teaching and Learning (2004). Those results confirmed that other scholars were also looking for places where they could submit and read manuscripts on best practices for teaching and learning in a variety of disciplines. With the acknowledged popularity of the PBL approach, the suggestion of a new journal was immediately ac-

cepted, and the process of forming the *Interdisciplinary Journal of Problem-based Learning* began. Finally, our fate was sealed when members of the PBL Special Interest Group, at their 2005 business meeting at the annual American Educational Research Association (AERA) conference in Montreal, pledged their enthusiastic support. And, as they say, the rest is history!

### Aims and Scope of the *IJPBL*

First and foremost, *IJPBL* is a scholarly journal; that is, we seek to engage both researchers and practitioners in meaningful conversations about PBL pedagogy. Our goal is to publish relevant, interesting, and challenging articles of research, analysis, or promising practice related to all aspects of implementing problem-based learning. We welcome articles that report on original research, classroom or project descriptions and evaluations, syntheses of the literature, assessments of the state of the art, and theoretical or conceptual positions that relate to the use of PBL in all disciplines and contexts. Furthermore, we encourage the submission of manuscripts that pertain to classroom applications of PBL, including the planning, management, implementation, and evaluation of PBL.

Second, *IJPBL* is a mentoring journal. What makes *IJPBL* different from other journals is the role of the editorial board. In addition to reviewing submitted manuscripts, the editorial board members have agreed to serve as mentors to junior faculty and graduate students to help them learn how to critique a scholarly paper, write constructive editorial remarks, and identify strategies to improve their own research and writing practices through the review process. In effect, the graduate students and junior faculty will be learning what constitutes excellence in scholarship by participating in a real-world experience. In some respects, the review process is PBL in action.

In addition, as part of our mentoring mission, we plan to provide one graduate student or untenured faculty member, per issue, with the opportunity to work closely with a board member to refine an article that he/she has submitted for publication. For example, for this issue, Woei Hung, a faculty member at the University of Arizona South, received one-on-one mentoring from David Jonassen, an *IJPBL* board member, to prepare his article for publication. Of course, we envision additional mentoring being provided by members of the PBL community at-large, as readers and authors engage in constructive, critical conversations about any and all articles published.

Third, *IJPBL* is stewardship in action. Expert educators, using the PBL approach, will have the opportunity to mentor and coach evolving experts by agreeing to:

- Share strategies for implementing innovative instruction and delivery of PBL,
- Conduct meaningful research on PBL and write manuscripts of their work for future issues of *IJPBL*, and

- Review the work of novice users of PBL and provide feedback and guidance.

Finally, we envision *IJPBL* as a community of practice. As PBL gains popularity, faculty are looking for tools they can use to guide them in instructional design and delivery. *IJPBL* provides practical application and research in one place. In addition to the journal, we envision the *IJPBL* website providing PBL advocates, enthusiasts, and practitioners with:

- A discussion board to post reviews of PBL books, online resources, techniques, etc.,
- A supportive online environment to experiment with PBL strategies before taking them into a classroom, and
- An archive of meaningful research on theory and practice in PBL.

We look forward to your continued and important contributions to this ambitious undertaking!

### Articles in This Issue

The articles in this inaugural issue provide a snapshot of the current status of PBL while also capturing our vision for the future. While each article describes many things that we currently know about PBL, each also describes where our knowledge is lacking. As such, these existing gaps provide many fertile avenues for future work. Whether you are a new or seasoned PBL enthusiast, the articles in this issue are designed to challenge, stimulate, and provoke additional research and practice in this area.

John Savery, in his article, "Overview of PBL: Definitions and Distinctions," answers the question, "What is PBL?" This provides a fitting opening to our inaugural issue, as it captures the essence of PBL and describes how it differs from, and is similar to, other forms of student-centered learning. PBL has a rich history; Savery introduces us to this important context and poses both ongoing and new questions for future authors and researchers to consider.

Cindy Hmelo-Silver and Howard Barrows, in their article, "Goals and Strategies of a Problem-based Learning Facilitator," provide a detailed analysis of the strategies that an expert facilitator (Barrows) uses to meet his instructional goals (e.g., helping students construct causal explanations, reason effectively, and become self-directed learners) in a PBL learning context. As such, this article allows all of us to learn from one of the founding fathers of PBL. Just as Barrows mentored Hmelo-Silver regarding what it means to be an expert PBL facilitator, he now mentors us through this article. In effect, this article helps us understand what it takes to facilitate learning in a PBL environment. More simply stated, it answers the question, "How do we do PBL?" or "What does effective PBL look like?"

Although the answer to this question may appear simple, those of us who have used,

or attempted to use, PBL in our classrooms know that it is anything but simple to pull off the types of expert facilitation moves that Barrows does in his teaching. Novice instructors may understand intellectually what is needed, but they typically need additional support to help them become more comfortable (and thus more expert) in their use of this method. In the article "Jumping the PBL Implementation Hurdle: Supporting the Efforts of K–12 Teachers," my colleague Krista Simons and I recognize these challenges and describe a number of strategies that novice PBL instructors, particularly those working in K–12 contexts, can use to scaffold their early implementation efforts. Specifically, we describe methods for creating a supportive classroom culture, adjusting to changing roles, and scaffolding student learning and performance. In essence, we address the question, "How can we help novices use PBL effectively?"

Woei Hung provides readers with a framework for designing authentic problems for PBL environments in his article, "The 3C3R Model: A Conceptual Framework for Designing Problems in PBL." Recognizing that the PBL question is the focal point around which the rest of the unit revolves, Hung outlines specific criteria that can be used to judge the worthiness of candidate PBL questions. This helps us understand "What does a good PBL question look like?" or "How can I determine if a PBL question will pass muster with my students?" As noted earlier, Hung was selected to receive the Junior Faculty Mentee Award; as such, he received expert guidance and mentoring from an *IJPBL* board member while revising his article for publication.

Finally, in their article, "Preparing Teachers to Use Problem-centered, Inquiry-based Science: Lessons from a Four-Year Professional Development Project," James Lehman, Melissa George, Peggy Buchanan, and Michael Rush describe efforts to support science teachers' uses of project-based learning (a second cousin to PBL) during a four-year professional development program. This article not only describes the critical components of the professional development program, but also presents evidence of the impact on more than 850 students and 280 teachers. This article helps us answer the question, "What happens when students and teachers are given opportunities to learn science using a problem-centered approach?"

All in all, the articles in this inaugural issue present many new ideas as well as a wide range of issues related to designing and using PBL methods in the classroom. We hope that you find this issue to be both inspiring and challenging; we look forward to receiving many more contributions from the PBL community of scholars and practitioners.

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