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Editors' Introduction

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THE INTERDISCIPLINARY JOURNAL OF PROBLEM-BASED LEARNING

EDITORS' INTRODUCTION

Editors' Introduction

Jiyeon Jung (Indiana University) and Michael M. Grant (University of Memphis)

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Overview of this Issue

Looking Back

As we finalize the fifth special issue of *IJPBL*, we thought it would be valuable to take a quick look back at the specific topics and themes we have highlighted in problem-based learning (PBL) broadly over the past eight years. So far, the special issues in *IJPBL* have addressed the following:

- the efficacy of PBL (see volume 3, issue 1; <http://docs.lib.purdue.edu/ijpbl/vol3/iss1/>),
- PBL in a specific disciplinary setting (i.e., engineering education; see volume 4, issue 2; <http://docs.lib.purdue.edu/ijpbl/vol4/iss2/>),
- PBL's development in different countries (see volume 6, issue 1; <http://docs.lib.purdue.edu/ijpbl/vol6/iss1/>), and
- the extension and legacy of Dr. Howard Barrows in promoting and advancing the field (see volume 7, issue 1; <http://docs.lib.purdue.edu/ijpbl/vol7/iss1/>).

The selection of topics for the special issues reflects that we, as a PBL community, value them as current and important.

In this special issue, we focus on the role of technology in PBL in teacher education. We are often led to believe that the role of technology is essential to enabling student learning through dealing with real world problems (Duffy & Jonassen, 1992). Particularly in K–12 settings, educational policies and funds have fueled stakeholders (e.g., teachers, principals, teacher educators, etc.) to explore more about the role of technology (Culp, Honey, & Mandinach, 2005). In this regard, it is important that educational researchers provide them with sufficient empirical evidence to make grounded decisions.

In K–12 settings, the role of technology can be broadly examined from the perspectives of its users: the teacher and the students. To assess the coverage of the journal on this topic, we took a quick review at our past publications. A total of 36 articles have been published in non-special issues. The review showed, roughly, that out of these 36, five used K–12

student data as the major data source (i.e., Belland, Ertmer, & Simons, 2006; Brush, & Saye, 2008; Grant, 2011; Lehman, George, Buchanan, & Rush, 2006; Mergendoller, Maxwell, & Bellisimo, 2006), and four regarded technology as one of the core aspects of their observation (Belland et al., 2006; Brush, & Saye, 2008; Grant, 2011; Lehman et al., 2006). There were also 12 articles that used inservice or preservice teachers as the major data source (i.e., Asghar, Ellington, Rice, Johnson, & Prime, 2012; Ertmer, & Simons, 2006; Goodnough, & Hung, 2008; Hakkarainen, 2011; Hjalmarson, & Diefes-Dux, 2008; Hmelo-Silver, Derry, Bitterman, & Hatrak, 2008; Liu, Wivagg, Geurtz, Lee, & Chang, 2012; Pecore, 2013; Tamim, & Grant, 2013; Walker et al., 2011; Weizman et al., 2008; Zhang, Lundeberg, McConnell, Koehler, & Eberhardt, 2010), and only four of these discussed technology explicitly (Ertmer, & Simons, 2006; Hakkarainen, 2011; Liu et al., 2012; Walker et al., 2011).

While *IJPBL* does not represent the entire body of PBL publications, this review result suggests that we could spare a little more of our attention to understanding the role of technology from the teacher's perspective. The current special issue was a great venue for this discussion.

Looking Forward

Thanks to our guest editors Thomas Brush (tbrush@indiana.edu) and John Saye (sayejo@auburn.edu), we have five more articles that add to our understanding of technology-supported PBL in teacher education. The selection captures a variety of subject areas, kinds of technology, and settings, with diverse perspectives on investigation. See the Guest Editors' Introduction for an overview of each of the articles, as well as an interpretation of what these articles say together (see <http://docs.lib.purdue.edu/ijpbl/vol8/iss1/7>). We believe this is a nice snapshot of how vast the field for investigation can be.

Furthermore, we are happy to share Liu and her graduate students' experiences of collaboratively designing and developing a multimedia PBL environment for middle

school science, Alien Rescue, in "Creating a Multimedia Enhanced Problem-Based Learning Environment for Middle School Science: Voices from the Developers." This article, in our Voices from the Field section, depicts the iterative, and sometimes messy, process of design and development. It not only details the team's design and development process but also attends to the individual roles and perspectives. Moreover, it suggests that peer-mentoring was essential to their collaboration—useful information for our PBL researcher/practitioner readers to consider. The authors also exemplified how design-based research (Design-Based Research Collective, 2003; McKenney & Reeves, 2012) could inform both design theories and design practices.

Grant (2013) once explained the Voices from the Field section would include "articles that describe and interpret implementations of PBL (e.g., problem-based learning, project-based learning, case-based learning, anchored instruction, problem solving, etc.) *in situ*" (p. 169). Overall, the authentic and descriptive nature of Liu et al.'s article validates what we had aimed to achieve by launching the Voices from the Field section as a meaningful choice for our readers.

We are also excited about the relaunch of the Book Reviews section. We are pleased to present two book reviews from recent publications. First, *Teaching Science in Elementary and Middle School: A Project-Based Approach* by Krajcik and Czerniak (2014) is reviewed by Kelly. In its fourth edition, Krajcik's work in project-based science continues to provide a foundation for implementing project-based learning. Second, *Learning, Problem Solving, and Mindtools: Essays in Honor of David H. Jonassen*, edited by Spector, Lockee, Smaldino, and Herring (2013), is reviewed by Russell. This festschrift offers a broad spectrum of essays on the extensions of problem solving and Jonassen's work to improve complex and authentic learning.

Thank You, Hello, and Good Bye

We would like to take a moment to express our gratitude toward the three members who are retiring from the leadership roles at *IJPBL*: Thank you to Dr. Chandra Orrill (associate professor in STEM Education at University of Massachusetts Dartmouth) for serving us as an *IJPBL* editorial board member, and to Dr. Johannes Strobel (Director for Educational Outreach Programs and associate professor in Engineering and Education at Texas A&M College Station) and Dr. Deniz Eseryel (associate professor in Education Psychology at University of Oklahoma) for serving us as the book editors. We appreciate your additional commitment and time you dedicated to the improvement of this journal.

In addition, we are pleased to introduce four individuals who are taking on or renewing their leadership roles. First,

thank you Dr. Xun Ge (chair and a professor in Educational Psychology at Oklahoma University; xge@ou.edu) for extending her service on the editorial board for two more years. She has been a board member since 2010 and is now filling in for Dr. Krista Glazewski, the current co-editor. Furthermore, we welcome Dr. Sofie Loyens (assistant professor in Educational Psychology at Erasmus University Rotterdam; loyens@fsw.eur.nl) and Dr. Brian Belland (assistant professor in Instructional Technology and Learning Sciences at Utah State University; brian.belland@usu.edu) to the *IJPBL* Editorial Board. They have been actively involved in the publication process both as authors and reviewers. Lastly, thank you Dr. Suha Tamim (part time faculty at University of Memphis; srtamim@memphis.edu) for agreeing to be our interim Book Review Editor from 2013 to 2014. She is a former *IJPBL* editorial assistant (2011–12) and worked with Dr. Grant. Including our current issue, she has book reviews scheduled for three issues.

We are lucky to have such devoted members to join our leadership.

References

- Asghar, A., Ellington, R., Rice, E., Johnson, F., & Prime, G. M. (2012). Supporting STEM education in secondary science contexts. *Interdisciplinary Journal of Problem-Based Learning*, 6(2), 85–125. <http://dx.doi.org/10.7771/1541-5015.1349>
- Belland, B. R., Ertmer, P. A., & Simons, K. D. (2006). Perceptions of the value of problem-based learning among students with special needs and their teachers. *Interdisciplinary Journal of Problem-Based Learning*, 1(2), 1–18. <http://dx.doi.org/10.7771/1541-5015.1024>
- Brush, T., & Saye, J. (2008). The effects of multimedia-supported problem-based inquiry on student engagement, empathy, and assumptions about history. *Interdisciplinary Journal of Problem-Based Learning*, 2(1), 21–56. <http://dx.doi.org/10.7771/1541-5015.1052>
- Culp, K. M., Honey, M., & Mandinach, E. (2005). A retrospective on twenty years of education technology policy. *Journal of Educational Computing Research*, 32(3), 279–307. <http://dx.doi.org/10.2190/7W71-QVT2-PAP2-UDX7>
- Design-Based Research Collective. (2003). Design-based research: An emerging paradigm for educational inquiry. *Educational Researcher*, 32(1), 5–8. <http://dx.doi.org/10.3102/0013189X032001005>
- Duffy, T. M., & Jonassen, D. H. (1992). Constructivism: New implications for instructional technology. In T. M. Duffy & D. H. Jonassen, eds., *Constructivism and the technology of instruction: A conversation* (pp. 1–16). Hillsdale, NJ: Lawrence Erlbaum.

- Ertmer, P. A., & Simons, K. D. (2006). Jumping the PBL implementation hurdle: Supporting the efforts of K–12 teachers. *Interdisciplinary Journal of Problem-Based Learning*, 1(1), 40–54. <http://dx.doi.org/10.7771/1541-5015.1005>
- Goodnough, K. C., & Hung, W. (2008). Engaging teachers' pedagogical content knowledge: Adopting a nine-step problem-based learning model. *Interdisciplinary Journal of Problem-Based Learning*, 2(2), 61–90. <http://dx.doi.org/10.7771/1541-5015.1082>
- Grant, M. M. (2011). Learning, beliefs, and products: Students' perspectives with project-based learning. *Interdisciplinary Journal of Problem-Based Learning*, 5(2), 37–69. <http://dx.doi.org/10.7771/1541-5015.1254>
- Hakkarainen, P. (2011). Promoting meaningful learning through video production-supported PBL. *Interdisciplinary Journal of Problem-Based Learning*, 5(1), 34–53. <http://dx.doi.org/10.7771/1541-5015.1217>
- Hjalmarson, M. A., & Diefes-Dux, H. (2008). Teacher as designer: A framework for teacher analysis of mathematical model-eliciting activities. *Interdisciplinary Journal of Problem-Based Learning*, 2(1), 57–78. <http://dx.doi.org/10.7771/1541-5015.1051>
- Hmelo-Silver, C. E., Derry, S. J., Bitterman, A., & Hatrak, N. (2008). Targeting transfer in a STELLAR PBL course for pre-service teachers. *Interdisciplinary Journal of Problem-Based Learning*, 3(2), 24–42. <http://dx.doi.org/10.7771/1541-5015.1055>
- Lehman, J. D., George, M., Buchanan, P., & Rush, M. (2006). Preparing teachers to use problem-centered, inquiry-based science: Lessons from a four-year professional development project. *Interdisciplinary Journal of Problem-Based Learning*, 1(1), 76–99. <http://dx.doi.org/10.7771/1541-5015.1007>
- Liu, M., Wivagg, J., Geurtz, R., Lee, S.-T., & Chang, H. M. (2012). Examining how middle school science teachers implement a multimedia-enriched problem-based learning environment. *Interdisciplinary Journal of Problem-Based Learning*, 6(2), 46–84. <http://dx.doi.org/10.7771/1541-5015.1348>
- Mergendoller, J. R., Maxwell, N. L., & Bellisimo, Y. (2006). The effectiveness of problem-based instruction: A comparative study of instructional methods and student characteristics. *Interdisciplinary Journal of Problem-Based Learning*, 1(2), 49–69. <http://dx.doi.org/10.7771/1541-5015.1026>
- McKenney, S., & Reeves, T. C. (2012). *Conducting educational design research*. New York: Routledge.
- Pecore, J. L. (2013). Beyond beliefs: Teachers adapting problem-based learning to preexisting systems of practice. *Interdisciplinary Journal of Problem-Based Learning*, 7(2), 7–33. <http://dx.doi.org/10.7771/1541-5015.1359>
- Spector, J. M., Lockee, B., Smaldino, S., & Herring, M. (Eds.). (2013). *Learning, problem solving, and mindtools: Essays in honor of David H. Jonassen*. New York: Routledge.
- Tamim, S. R., & Grant, M. M. (2013). Definitions and uses: Case study of teachers implementing project-based learning. *Interdisciplinary Journal of Problem-Based Learning*, 7(2), 72–101. <http://dx.doi.org/10.7771/1541-5015.1323>
- Walker, A., Recker, M., Robertshaw, M. B., Osen, J., Leary, H., Ye, L., & Sellers, L. (2011). Integrating technology and problem-based learning: A mixed methods study of two teacher professional development designs. *Interdisciplinary Journal of Problem-Based Learning*, 5(2), 70–94. <http://dx.doi.org/10.7771/1541-5015.1255>
- Weizman, A., Covitt, B. A., Koehler, M. J., Lundeberg, M. A., Oslund, J. A., Low, M. R., . . . Urban-Lurain, M. (2008). Measuring teachers' learning from a problem-based learning approach to professional development in science education. *Interdisciplinary Journal of Problem-Based Learning*, 2(2), 29–60. <http://dx.doi.org/10.7771/1541-5015.1081>
- Zhang, M., Lundeberg, M., McConnell, T. J., Koehler, M. J., & Eberhardt, J. (2010). Using questioning to facilitate discussion of science teaching problems in teacher professional development. *Interdisciplinary Journal of Problem-Based Learning*, 4(1), 57–82. <http://dx.doi.org/10.7771/1541-5015.1097>

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