

Chapter 59

Implementing a Problem–Based Technology Learning Environment to Foster Cultural Literacy and Responsiveness Instructional Skills

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ABSTRACT

Technology is part of our daily lives; we can observe the use of technology in our cell phones and portable computers and, most notably, within classrooms. If used within the proper pedagogical context, computer-aided technology can be quite advantageous to teacher educators whose pedagogical belief is also centered on teaching and learning that is responsive to students' needs and cultures. When technology is combined with Problem-Based Learning (PBL), it can be a powerful aid to help pre-service teachers build cultural literacy and the skills needed to be responsive to students' needs. This chapter presents a single case study of the highly successful academic outcomes through the wedding of PBL and technology.

INTRODUCTION

It is the perceptions of the authors, both of whom are teacher educators; that students in our programs exhibit an alarming deficiency in cultural literacy. We define *cultural literacy* as the ability to “read” the nation’s traditional cultural narrative through critical eyes. It is our effort to examine our national narrative and the equally unexamined beliefs that are spawned in such a vacuum and readily accepted by an uncritical populous. Such beliefs engender, support, and perpetuate idealism about the United

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States of America (USA) and its people. Moreover, the lack of cultural literacy contributes to the lack of intellectual curiosity many citizens of this country display about other nations, other cultures, the lack of desire to learn any language other than English, or even their own history. Frequently, a cultural literacy deficit may lead to the production of totally erroneous “knowledge.” Misinformed and lacking a deep contextual knowledge of one’s own national history has produced an epidemic of highly opinionated citizens contently happy to function in a data free environment.

Further, a lack of cultural literacy may impact negatively the process of teaching because teachers come to rely on state mandated standards and curriculum guides. Instead of viewing the curriculum as a foundation upon which they should build in order to provide the students an intellectually holistic educational experience, these curriculum tools become unquestioned documents that are an end in themselves. In this age of accountability, teachers are fearful of negative characterization of their skill as educators. Therefore, they increasingly prepare their students to take and successfully navigate an increasingly crowded path through grades K-12 filled with high-stakes testing in nearly every grade level by “teaching to the test.” The message conveyed to students is not one that encourages them to dig below the surface in order to obtain a more expansive and culturally rich education.

BACKGROUND

Pre-Service Teacher Preparation: Problem-Based Learning

Our task as teacher educators is twofold, develop cognitive skills and refine technological skills of future teachers. Incorporating technology into problem-based learning is a highly effective pedagogical practice intended to achieve our goal. According to Study Guides and Strategies (n.d.) problem-based learning is a highly desirable alternative to the traditional instructional method of lecturing. Problem-based learning (PBL) is a student-centered method that can be used as a tool to prepare culturally literate and responsive teachers. Elrod, Coleman, Shumpert, and Medley (2005) believe that “traditional lecture/discussion methods do not foster the level of critical thinking skills needed in today’s complex and diverse school environment” (p. 28). PBL has been touted as a learning strategy for 21st century classroom. The process of PBL is instrumental in increasing the cognitive skills of students, providing real-world application of learning, and developing critical thinking skills.

PBL was established in the health sciences as a way to make learning more realistic. It was believed that “teaching discipline specific content separately, using a ‘traditional’ lecture approach, did little to provide learners with a context for the content or for its clinical application”(Savery, 2006, p. 10). Barrows (1986) identified five objectives that PBL is most likely to address for medical students. These objectives are constructing clinically useful knowledge, fostering clinical reasoning strategies, developing effective self-directed learning strategies, attaining higher motivation for learning, and becoming more effective collaborators. We believe these are also the goals for building culturally literate teachers who will possess the skills required to be culturally responsive instructors. Interestingly, Blackbourn, Bunch, Fillingim, Thomas, Schillinger, and Dupree (2008) strongly advocate the use of PBL in teacher training.

PBL is now a cross-curriculum strategy (Hung, Jonassen, & Liu, 2008) that has utility in both higher education and the K-12 system. PBL, as described by Pepper (2013), is reflective of “constructive learning principles that emphasize that learning is an active process where students create meaning based on their own experiences and interactions” (p. 23). Duch, Groh, and Allen, as quoted in Saverty (2006), list

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