Chapter 14
Rethinking Technology in Teacher Education Programs:
Creating Content-Centric Learning Environments

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ABSTRACT

This chapter is organized around shifting paradigms of information literacy, instructional literacy, and technology literacy. Information literacy focuses on the questions of what knowledge management is. Instructional literacy advocates the promotion of new teaching methods rather than new technology. Technology literacy should be rise from grounded contexts rather than be considered a skill. The chapter explores the impact of these shifts on the role of teacher, student, and content to promote knowledge creation (learning). The authors seek to identify the most effective ways to present instruction. Finally, the chapter discusses technology literacy as the merging the two constructs—teaching and using technology.

INTRODUCTION

Many years ago one of the authors of this manuscript attended a conference at which the speaker provided an excellent example of learning by osmosis, which refers to gradual and often process of assimilation (Roberts, 2008). The presenter sang or whistled some theme songs from TV programs from the 1960's and 70's. Many of us had immediate recall and shouted out the name of the shows – Andy Griffith, Green Acres, Petticoat Junction, and the Adams Family. He asked us who taught us the names of the songs. We answered no one taught us – we just knew them. We were

unaware that we had been learning. Learning with technology should be that transparent – students should learn by osmosis. In the classroom, the learning experience should be the focus, not the technology. Therefore, instruction should start with what do teachers want the students to learn, and then they should decide how technology can be used to support the learning activity. This chapter focuses on rethinking technology training in teacher education programs to enable teacher candidates to integrate technology into instruction in more meaningful ways.

To date, teacher education coursework focuses on ways to use technology in classrooms and often addresses ways to use specific tools, such as blogs, wikis, etc. As a result, candidates learn how to use specific technology tools and apply them in certain contexts. However, they often lack the ability to look beyond specific assignments to use technology as a learning tool, not the focal point of the lesson. Instead of worrying about adding technology to lesson plans, candidates should be thinking about the best possible ways to meet curricular objectives with technology. Therefore, rather than thinking about how to use technology in lessons, we propose a return to the roots of computer-supported collaboration. In this chapter, the term social will be purposefully used instead of Web 2.0 to return focus from product to purpose because the center of attention is not on what we use to get there, but what is needed to arrive. This chapter is organized around the shifting paradigms of information literacy, instructional literacy, and technology literacy. Throughout the chapter, we explore the impact of these shifts on the role of teacher, student, and content to promote knowledge creation (learning). Information literacy focuses on managing knowledge. Instructional literacy is moving toward the promotion of new teaching methods rather than new technology. Technology literacy is rising from grounded contexts. As a result, technology literacy is the merging the two constructs -- teaching and using technology to effectively present instruction.

During the mid-1990's, the push for technology literacy emphasized putting technology in classrooms. Technology literacy was conceived as a stand-alone construct – synonymous with computer literacy or tools. This description of technology literacy is demonstrated within *President Clinton's Call to Action for American Education in the 21st Century* (U.S. Department of Education, Archived Information, 1997). Throughout the 1990's and early 2000's, distinct literacies emerged by definition and practice. Literacy expansion included information literacy, digital literacy, new literacy, computer literacy, media literacy, as well as other emerging literacies (Holum & Gahala, 2001).

In this chapter we propose reducing multiple literacies to one by looking at technology as a structure grounded in the contexts of learning and teaching. This change is the reduction of three distinct education competencies into two integrated competencies. We present technology literacy within the context of information literacy and pedagogical (instructional) literacy.

In the first section, we will discuss the paradigm shifts occurring in education within the context of pedagogy. In other words, what is the impact of these shifts on the role of teacher, student, and content to promote knowledge creation – learning? Lee and Lan (2007, p. 48) note that from the initial static or read-only web (Web 1.0) to the read-write, collaborative, and social web (Web 2.0), there has been a shift from personal-focus to community-focus. Knowledge management shifted from a focus on individual intelligence to communal or collective intelligence (Nikolov, 2007, p. 2). Similarly, in education, the pedagogical dialogue moved from teacher-centric to learner-centric. Now, a new paradigm is emerging in response to current and emerging technology enhancements – a shift from learner-centric to content-centric. Content-centric is not about the final product, but instead, focuses on the generation of content. This is a shift from the content product-consumption model to the content-user-producer model (Bruns,

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