Chapter 6
Educating Pre-Service and Novice Teachers on the Best Practices for Curriculum Integration of Web 2.0 Tools and Instructional Technology

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ABSTRACT

This chapter explores the use of Web 2.0 technology by pre-service and novice teachers. It explores in particular the use of Blogs, Social Media Networks, and Wikis. For each Web 2.0 technology tool, a discussion about the appropriate use and potential problems ensues. The focus of the chapter is to present the potential ethical concerns for pre-service and novice teachers in the use of Web 2.0 technologies. Additionally, some frameworks are suggested in helping teacher preparation programs educate their candidates on the use of Web 2.0 technologies. A resource of possible Web 2.0 technologies is included at the end of the chapter.

INTRODUCTION

Teacher educators are experiencing a transition period within teacher preparation programs with students being connected even more to a global community through their smart phones and computers (English & Kitsantas, 2013). Internet access and control continues to be discussed by World Leaders. In December 2003 at Geneva, 175 countries gathered to discuss how to make sure that Africa, Asia, and Latin America do not lose the opportunity of being part of the internet age. The session created a Declaration of Principles has helped to shepherd the world in navigating this internet age.

Despite the focus on the developing nations of the World with the assumption that developed nations are already set to be fully incorporated, beginning teachers will enter sites that struggle with budgets and the

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ability to transform from a 20th century model of learning to a 21st century curriculum. Other pre-service and novice teachers may be lucky enough to enter educational sites that are fully functional 21st century institutions of learning. The classrooms of the last century were ones that focused on teacher-centered methods and fragmented curriculum (Kellner, 2001). With the arrangement of the classroom into neat rows of student desks and the teacher upfront leading the class. The 21st century curriculum should be one that is interdisciplinary, project-based, and research-based (English & Kitsantas, 2013) Research has demonstrated that project-based learning (PBL) helps with knowledge acquisition and retention for most students (e.g., Dochy, Mein, Van Den Bossche, & Gijbels, 2003; Mergendoller, Maxwell, & Bellisimo, 2006; Penuel, Means, & Simkins, 2000; Ross, Sanders, Wright, Stringfield, Wong, & Alberg, 2001). The internet continues to evolve as an educational tool and in many circumstances is a necessary resource. With advances in audio, bandwidth, synchronous/asynchronous communication tools, and applications galore, educators are in the age of Web 2.0 (Banister, 2008). This chapter explores the topics of Web 2.0 applications and instructional technology and how to help pre-service and novice teachers incorporate it effectively into their classrooms. Too often these teachers hear of good idea on a web page and just pull it into their classroom without any idea of how it should be used. Their friends will share an idea or pin it, like one does on Pinterest, and they feel they can incorporate it immediately into their lessons. There is a need for teacher preparation programs to train pre-service and novice teachers on the effective use of Web 2.0 technologies (Hicks & Graber). Table 1 is adapted from the website http://www.21stcenturyschools.com/, which provides some good comparisons between the 20th century and the 21st century environments for learning.

According to the Horizon Report (Johnson, Levine, Smith, & Smythe, 2009, p. 5) there are five factors at work that impact 21st century classrooms:

1. There is a growing need for formal instruction in key new skills, including information literacy, visual literacy, and technological literacy.
2. Students are different, but educational practice and the material that supports it are changing only slowly.
3. Learning that incorporates real life experiences is not occurring enough and is undervalued when it does take place.

Table 1. Differences between 20th century and 21st century classrooms

20th Century Classroom	21st Century Classroom
Time-based	Outcome-based
Memorizing Facts	What students know and can do
Focus on lower level of Bloom's Taxonomy	Lessons push learners to upper levels of Bloom
Passive Learners	Active Learners
Teacher-Centered	Student-Centered
Fragmented Curriculum	Integrated and Interdisciplinary Curriculum
Print is primary mode of instruction	Performance and Multiple Modes of instruction
Factory model and Scientific Management	Global Model for high-tech society

Adapted from http://www.21stcenturyschools.com/20th-vs-21st-century-classroom.html. (2016).