Chapter 5
Student–Authored Textbooks:
Why They're Necessary and How They Can Be Done

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ABSTRACT

This chapter describes a unique educational initiative requiring students to write their own, shared textbook using wiki technologies. This chapter attempts to address the strengths and weaknesses of this type of educational program. In addition, it explores the philosophical underpinnings of such a process, the implications of this process for educational systems in general, and several methods for incorporating this type of project into every level of education. Special emphasis is placed on exploring how student-authoring addresses skills including information literacy skills, that are underserved in more traditional educational settings.

INTRODUCTION

This chapter will describe and explore an initiative to develop student-authored textbooks at the university level using wiki software. Included in

the chapter will be an explanation of the project itself, a discussion of the theoretical underpinnings of the project, an examination of research into the project's effectiveness, and an exploration of how the process can be implemented in other settings (e.g. K-12 or smaller classes). All of these elements will be discussed in order to

demonstrate why this type of activity is necessary in 21st century educational settings and how it can be incorporated.

The project to be outlined in this chapter works as an exemplar of how to infuse 21st century skills throughout the curriculum rather than as one-off lessons (which have limited success in terms of student recall or skill level). As such, it demonstrates one desirable future for technology integration, not only in higher education, but also in the K-12 context.

It is, however, not enough to simply describe this project. This project must be placed within a larger context. As such, this chapter will have three missions:

1. Describe the project as it currently stands, including discussion of research results into the effectiveness of the process.
2. Explore the theoretical and philosophical underpinnings of the project, focusing primarily on how this type of project more effectively meets the needs of 21st century learners.
3. Discuss how this type of project can be implemented in different educational settings, such as K-12 classrooms.

BACKGROUND

New research is beginning to demonstrate the importance of setting up educational systems that facilitate the learning styles of Millennial learners. According to Sweeney (2006), these students are multi-taskers geared toward experiential learning and working collaboratively. In order to understand the educational process that this chapter will explore, it is necessary to provide background information on the nature of wiki software. Wikis are, first and foremost, "quick," as the original meaning of this Hawaiian word suggests (Lee, 2006). Leuf and Cunningham (2001) defined wiki as "a freely expandable collection of interlinked Web pages, a hypertext system for storing and modifying information–a database where each page is easily editable by any user with a forms-capable Web browser client" (p. 14). Franklin and Van Harmelen (2007) define a wiki as "a system that allows one or more people to build up a corpus of knowledge in a set of interlinked web pages, using a process of creating and editing pages" (p.5). Leuf and Cunningham pointed out that wiki technology has three major attributes in common: the participation of wiki community members in the editing of wiki pages (wikis), the opportunity for wiki members to build and develop "meaningful topic association" (p. 16) through numerous links between wiki and other webpages, and the supportiveness for wiki community members to collaborate in updating wiki content. Raman, Ryan, and Olfman (2005) share the same view with Leuf and Cunningham, defining wiki as a group collaboration software tool based on Web server technology that can be used to facilitate collaborative knowledge creation and sharing in an academic environment. Other researchers have confirmed this feature of wiki technology (Lamb, 2004; Wagner, 2004; Goodwin-Jones, 2005; Tokin, 2005).

Wikis are just one of the many new tools that collectively make up what has become known as Web 2.0. According to Knobel and Wilber (2009), Web 2.0 has at its center three main tenets—"participation, collaboration, and distribution" (p. 21). The Wikimedia Foundation (2009) states, "The term 'Web 2.0' refers to a perceived second generation of web development and design, that aims to facilitate communication, secure information sharing, interoperability, and collaboration on the World Wide Web."

As wiki technology also functions as an "open author system for a conjoined construction and maintenance of Websites" (Fuchs-Kittowsk & Köhler, 2002, p.10), it can be edited and repaired anytime, by potentially anyone, which makes people doubt the accuracy of its content. According to an empirical study conducted by *Nature*'s

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