

## Chapter 4.3

# Wikis as an Exemplary Model of Open Source Learning

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### ABSTRACT

In their simplest form, Wikis are Web pages that allow people to collaboratively create and edit documents online. Key principles of simplicity, robustness, and accessibility underlie the wiki publication system. It is the open and free spirit of Wikis fundamental to open source software (OSS) that offers new contexts for learning and knowledge creation with technology. This chapter will briefly consider the role of technology in learning before discussing Wikis and their development. The emerging literature on the application of Wikis to education will be reviewed and discussed. It will be argued that Wikis embody an exemplary model of open source learning that has the potential to transform the use of information communication technologies in education.

### INTRODUCTION

Wikis are an instance of what is known as a read/write technology. They allow groups of users, many of whom are anonymous, to create, view,

and edit Web pages. In many cases, these pages are online, but there are instances of Wikis used as personal notebooks (e.g., Tiddlywiki, <http://www.tiddlywiki.com/>). All wiki systems use a simplified html markup language, but as their use spreads, so does the appeal of more user-friendly java-based WYSIWYG editors. It will be argued that the simplicity, accessibility, and openness of wikis support a model of collaboration and knowledge building that represents an exemplary model of learning with technology. This model is congruent with many of the key principles embodied in free and open source software (FOSS) and sociocultural theories of learning (Lave & Wenger, 1991; Vygotsky, 1978; Wenger, 1998). Many Internet-based communities and groups are already finding ways to embrace these forms of learning as a part of their ongoing process of community capacity building. In contrast, formal places of learning such as schools and universities have been slow to explore the potential of this technology. This chapter will briefly consider the role of technology in learning before discussing Wikis and their development. The chapter argues that FOSS and Wikis in particular offer education

far more than just low-cost software or even sound principles of practice; they open up a space for new models of learning and knowledge creation with technology. The emerging literature on the application of Wikis to education will be reviewed before considering Wikis as an exemplary model of open source learning.

## **TECHNOLOGY AND LEARNING**

While the application of computing technology to teaching and learning has at least a 30-year history, there is a large body of literature that suggests education is still struggling to use technology effectively (Cuban, 2001; Healy, 1998; Oppenheimer, 2003; Postman, 1993; Stoll, 1999). Results from large international studies show that the dominant use of technology tends to focus on skills and involves learners as content users and not content creators (Kozma, 2003). Part of the problem is that formal places of learning by their very nature are highly structured contexts. The role of context is important because there is a direct relationship between form and quality of the pedagogy and the form and quality of the resultant learning. Different teaching approaches and learning contexts result in different outcomes for students. In Boaler's (1997) study of mathematics classrooms, she showed that teacher-centered and rule-based teaching approaches not only produce low levels of student engagement but work to effectively limit the scope of the learning outcomes. There is a strong suggestion from her work that routine-style classrooms generate routine knowledge and that this is neither of the quality nor quantity required for real-world mathematical problem solving. Her key finding is that context matters. The Russian neuropsychologist Alexandra Luria understood this relationship well when he argued that cognition is a function of context. "Cognitive processes ... are not independent and unchanging 'abilities' ... they are processes occurring in concrete, practical activities and are

formed within the limits of this activity" (Luria, 1971, p. 266). In effect, Luria was saying that cognition is plastic, a finding that has subsequently been confirmed by contemporary neuroscience (Goldberg, 1990, 2001). The activities and tasks we set for learners not only determine the type and quality of knowledge that is produced but, more importantly, set the parameters for the development of their cognitive processes. Therefore, from a philosophical and practical design point of view, the contexts or settings of learning should be as open and free as possible.

There is also a growing body of literature suggesting that young people learn in different ways to past students and, therefore, require (and even demand) different teaching approaches (Gee, 2003; Oblinger, 2004; Prensky, 2001). Chris Dede (2005) has written extensively in this area, and in his assessment, these learners seek to co-design their learning experiences and prefer communal learning over individual learning. Anyone who has recently studied in schools or universities will know that despite institutional rhetoric to the contrary, these new modes of teaching and learning are not widespread. The pedagogical challenge is to use technology in ways that build upon learners' existing experiences and foster the creation of what von Krogh, Ichijo, and Nonaka (2000) refer to as communities of knowledge. In education, there is widespread recognition of the need to explore more collaborative approaches to learning (Jonassen, Peck & Wilson, 1999; Kozma, 2003; Laurillard, 2002; Sefton-Green, 2004; Somekh, 2004). Wikis offer one such tool, which is already a part of many learners' everyday lives as are a wide variety of other social software such as blogs and social networking applications like MySpace (<http://www.myspace.com/>).

## **BACKGROUND TO WIKIS**

The founding developer of the World Wide Web (WWW), Sir Tim Berners Lee, first conceived of

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