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The tensions of transformation in three cross-institutional wikibook projects

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ABSTRACT

Wikis have the potential to change learning environments from traditional knowledge transmission models to knowledge transformative ones where students generate, share, and reshape knowledge. In this three-part study, graduate students created wikibooks across institutional settings. One of these projects extended to universities in China, Taiwan, Malaysia, and the United States, whereas the other two involved two universities in the United States. The degree of scaffolding and other support varied in each project. At the end of each study, students were surveyed about their wikibook efforts. In addition, instructors across the institutions were interviewed about the obstacles they faced as well the opportunities. Based on these results, more than two dozen cross-institutional wikibook issues are organized into five key themes: (1) instructional issues; (2) collaboration issues; (3) technology issues; (4) constructivism and sense of community issues; and (5) wikibook issues. Several recommendations are offered related to the use of wikibooks in the classroom as a transformational learning tool.

1. Introduction

The use of wikis, and in particular, wikibooks, is highly linked to the educational climate of today. It is a culture of participatory learning that has been building for the past two decades. In addition to learning participation, wiki-related projects provide opportunities for learning transformation when they expose learners to new points of view or perspectives as well as opportunities for critical reflection and examination of one's assumptions (About.com, 2008; Mezirow, 1991). While not all wiki-related activities in the classroom are transformational experiences, many of them are. In this paper, we discuss the tensions and issues surrounding cross-institutional collaboration in a wikibook project. Our experiences stem from three separate attempts to build wikibooks in cross-institutional settings. The tensions and issues we discuss relate to instructional decisions, collaboration considerations, technology factors, knowledge construction and sense of community, as well as the overall processes and procedures related to the wikibook project. We also provide some advice and guidelines for other instructors who might be wrestling with one or more of these tensions in a wikibook project in higher education or other settings. When these various issues are resolved and proper instructional scaffolds are in place, transformational change such as new perspectives or understandings might result. However, the success may depend on the type of students, the design of the wikibook project, the level of course, the number of participants, and many other factors.

While the focus on learner-centered instruction is akin to the work of John Seely Brown and his colleagues from twenty years ago (Brown, Collins, & Duguid, 1988, 1989; Collins, Brown, & Newman, 1989), with the Web 2.0 there is renewed interest. In effect, ideas related to situated cognition, cognitive apprenticeships, and cultures of learning have pushed beyond theoretical ideals to practical reality. Not only is such a new learning climate now possible, many of the tools and resources that make it so are free and highly accessible. For instance, as Brown (2006) notes, blogs and wikis are similar to studio learning, because an authentic audience is immediately present to review and give feedback on the work. Learning can now actually become a production and participation process, not mere consumption and absorption.

Brown and Adler (2008) believe that a key ingredient in these changing learning times is the opportunity for online sharing and collaboration. Today, anyone with an Internet connection can share resources, ideas, and conversations about learning. Anyone can participate in learning. For example, an individual wants to create a wiki how-to manual. In such a situation, learners can add their time, expertise, and research quests to a knowledge base from which the rest of world can access and learn. Collaboration on this how-to manual can come from learners at other institutions and geographic regions as well as from those who completed their formal learning

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years ago. Such learners are engaged by the feedback from each other as well as from their individual project quests. As prominently noted in the Brown et al. (1988) report, informal learning is emphasized over formal.

With this shift, it is time for schools and universities to move away from twentieth century teaching practices and toward the new millennium (Wallis & Steptoe, 2006). In a January 2007 interview, Steve Hargadon (2007) asked Brown about the skills he valued for the School 2.0. According to Brown, in the twenty-first century, there is a pressing need for creative expression, communication, interpretation of information found online, and collaboration with others one has never met. Other skills include becoming sensitive to cultural and language differences, as well as exposure to languages such as Spanish, Mandarin, and Korean. Learners can build such skills through real-world projects and activities.

While many emerging technologies do this, wiki technology in particular is important, because it is designed for quick knowledge construction and collaboration for either a private or a world audience. When learning is exposed to a world audience, it can become an apprenticeship into a community such as those in Wikipedia (Bryant, Forte, & Bruckman, 2005), open source software environments (Pan & Bonk, 2007), and online science portals. In such communities, learners can gradually become an expert. They may move from a reader or browser to an active contributor. Passive reception learning, which Brown forecasted to be on the way out in 1988, has become much less acceptable some twenty years later. Formal, teacher-centered instruction is still important, but the opportunities for student-initiated learning are more evident and accepted today. Anyone participating in MySpace or Facebook in North America, or the Korean CyWorld phenomenon, will realize that Vygotsky (1978, 1986) was correct when he suggested that learning begins as a social process.

In addition to the work of Vygotsky as well as Brown and Adler, most adult learning theorists (e.g., Knowles, 1984; Rogers, 1983) and distance learning experts (e.g., Moore, 1989; Wedemeyer, 1981) argue that the more choices and self-directed learning opportunities provided to learners, especially adult learners, the greater the chance for learning-related success. From the vantage point of these scholars, learning must be meaningful, interactive, and reflective. The selected activities should foster higher self-esteem, internal motivation, and goal driven opportunities. In addition, learning should be open, genuine, inviting, respectful, active, collaborative, and student driven. Problem-centered learning with immediate application of learning skills is also needed to motivate and engage learners. Wikibooks meet most, if not all, these criteria.

2. Wikis and wikibooks in the college classroom

As indicated, the use of wikis can lead to transformative experiences in learning environments. In terms of formal classroom situations, an instructor might use a wiki to have a class create a community product. For example, students might create a class glossary that can be updated by future classes. Another possibility is for a class or a group of students to create a report or white paper. Alternatively, the instructor might assign a class essay, joint chapter summary, or project outline. Or perhaps the students might transform their papers into chapters of a book on a particular topic, as has been shown in recent examples of wikibooks. They might also critique existing wikibooks on a topic related to the course which would cost nothing. Such wikibooks would likely be more current than standard textbooks. Other possibilities for a wiki project include debating course topics and readings, maintaining group progress journals, and sharing resources (e.g., conference information, websites, and writing samples). And, instructors might have their students edit pages of Wikipedia or some other wiki resources.

One example of wikibooks in a college classroom can be seen in the efforts of Richard Watson at the University of Georgia. He had the students in his XML class create a wikibook textbook. In this project, he attempted to teach collaboration, trust, creativity, and negotiation skills — important skills his students needed when they entered the business world (Evans, 2006). Each student was in charge of drafting one chapter of the book. However, anyone could edit or modify it in the wiki. In this type of project, the role of the instructor shifts from a focus on transmitting content to planning for students to interact with such a course. While Watson's wikibook project started off slowly with various technology glitches and text errors, it was ultimately a success.

In a similar project, de Pedro et al. (2006a,b) explored wiki-related projects over a two-year period using both qualitative and quantitative measures. They conducted eight wiki projects in areas such as biology, environmental sciences, and nursery involving information gathering, group synthesis, critical thinking, and writing class summary reports. While these projects also experienced some initial technology problems, the instructors identified many positive aspects of the wiki environments, including ease of use, speedy access, version control, and a history of those who made changes to the document. Students seemed to prefer wiki activities over traditional ones, although they were hesitant to allow others to view and modify their work-in-progress. Across their study, de Pedro et al. (2006a,b) found that using an "Editor-in-Chief" role was vital for higher quality work; in effect, someone must oversee the quality of the final wiki product.

Not everything went as planned in that study, however. As de Pedro and his colleagues found, across eight wiki projects at the University of Barcelona (de Pedro, 2006a,b), students were extremely hesitant to share messy or incomplete ideas. In addition, students might need prior exposure to a wikibook to create a greater sense of familiarity with the technology before becoming involved and committing to the project.

3. Methodology

Each of the three wikibook projects described below was conducted with master's and doctoral students. While it was possible for students to work on their wikibook project throughout the entire 15 week semester, it was not required. Typically student work did not begin until the second half of the semester and often in the final weeks. The second wikibook project, which entailed three distinct phases, was the closest to spanning the entire semester. The length of the third one, which involved five different universities, depended on when the particular course instructor introduced the project as well as the associated reminders, prompts, and task scaffolds provided.

3.1. Wikibook Project Number One

The first project took place in the spring of 2006. During that semester, master's and doctoral students from the University of Houston (UH) and Indiana University (IU) collaborated on an instructional technology book in Wikispaces related to the uses of instructional technology for sociocultural purposes (see link at end of paper). This wikibook project was an optional assignment. Students were partnered across institutions to review and provide feedback on each other's final products as critical friends. Students could correspond via email or within Wikispaces. There were introductory and concluding meetings using videoconferencing across the sites. Each student was given the option of writing one chapter in the wikibook and editing a chapter written by someone else, or completing one of several alternative tasks. This project had limited participation for several reasons: the optional nature of the assignment, assignment novelty, instructor modeling, and the part-time nature of the Houston students, as well as the lack of clear directions and scaffolding. Thirteen students completed surveys and four of them participated in interviews.