

10-8-2010

Wikis in Higher Education: Collaborative by Nature or Design?

Deborah LaPointe

Claire Conrad

Follow this and additional works at: https://digitalrepository.unm.edu/educ_fsp



Part of the [Education Commons](#)

Recommended Citation

LaPointe, Deborah and Claire Conrad. "Wikis in Higher Education: Collaborative by Nature or Design?" (2010).
https://digitalrepository.unm.edu/educ_fsp/2

This Article is brought to you for free and open access by the Scholarly Communication - Departments at UNM Digital Repository. It has been accepted for inclusion in Education Faculty Publications by an authorized administrator of UNM Digital Repository. For more information, please contact disc@unm.edu.

Wikis in Higher Education: Collaborative by Nature or Design?

Author

Deborah Kay LaPointe was born November 2, 1952, in Mommouth, Illinois. Following high school graduation she attended and graduated from Illinois State University (1975), Northern Illinois University (1978) and with a Ph.D. from the University of New Mexico with distinction (2003) in Organizational Learning and Instructional Technologies (OLIT).

Deb's diverse and interesting career included Director of Court Reporting Program (1994-97), Interim Director of Distance Learning (1997-1999) at Albuquerque TVI; Graduate Teaching Associate (2001-2003 College of Education, Adjunct Faculty (2003-2004) College of Education at University of New Mexico, Assistant Professor and Assistant Director of Education Development (2004-2009) at University of New Mexico Health Sciences Library Center and Informatics. Additionally Dr. LaPointe received a fellowship to the Edith Cowan University Visiting Research Fellowship School of Computer & Information Science in Perth, Australia (2004).

Dr. LaPointe's passion included learning with new technologies in traditional and virtual classroom classrooms and for collaboration across distances with colleagues on research projects. Envisioning learning in the future with technology and empowering those who did not have access to learning in other ways is what Dr Deborah Kay LaPointe taught, believed in, and practiced.

Research Assistant

Claire Conrad, M.A. Organizational Learning and Instructional Technologies (OLIT) at UNM is the Education Administration at the New Mexico Real Estate Commission. She interned with Dr. LaPointe at the UNM Health Sciences Center Learning Design Center from June-December 2007. Prior to working at the New Mexico Real Estate Commission, Ms. Conrad worked as an Administrator at the UNM School of Law.

Abstract

Web 2.0 has shifted attention from the content presented on a Web site to a focus on the contributors of the content and the interactions that lead to the development of the content. One Web 2.0 technology is a wiki. A wiki is commonly defined as a set of related Web 2.0 pages that can be authored and edited collectively. The premise underlying wikis is that the convenience of creating content in easily accessible work areas on the Web provides opportunity for all to collaborate. This qualitative study examined the experiences of two groups of learners who participated in the creation of two graduate course wikis. In addition to learning about students' experiences contributing to the course wikis, the research questions addressed how students decided what wiki content to create, contribute, and edit.

Key Words Web 2.0, wikis, social software, contributing content

Introduction

A new genre of Web-based technologies is changing the way we communicate, collaborate, share resources, and learn. These technologies include social software made possible by Web 2.0 and include blogs, wikis, podcasting, RSS feeds, social book marking, Gmail, and virtual worlds. While the Web 1.0 technologies provided access and opportunity for many to read Web content and those with html skills to provide Web content, Web 2.0 technologies allow us all—even those who do not know html or xml—to contribute Web content and rate, edit, customize, remix, and distribute content.

One Web 2.0 technology garnering attention for its many collaborative possibilities is wikis. A wiki is commonly defined as a set of related Web 2.0 pages based on a specific topic of interest. The pages can be authored and edited collectively. Authoring occurs in a Web browser using formatting tools similar to those regularly used in popular word processing applications. With minimal working knowledge of html, changes to the wiki are made through “live edit” in the browser window. Wikis also offer the organization and productivity tools we are accustomed to using with group projects such as inserting comments, sharing calendars, using chat room and voice functions, and Google Gadgets. Users can easily view and compare the current and prior versions of the wiki and restore the wiki to a previous version.

A “wiki,” therefore, looks like an application, yet a wiki is also a concept framed by an underlying value proposition. The value proposition underlying wikis is that the convenience of creating content in easily accessible work areas on the Web provides the opportunity for all to work together to create content. The ease of contributing reduces the learning curve that often prevents potential users from becoming authors. The potential for contributions by more authors allows us to hear more voices, bringing an increased diversity of opinions to the Web. Weinberger (2008) takes this value proposition further when he writes that the multiple contributions by diverse contributors will accumulate in neutral writings on topics, which he defines as a comprehensive treatment of a topic when all perspectives have been added. That enhanced perspective can be shared and applied in problem solving scenarios in academic coursework. The relevant community of practice becomes the source of new ideas that spark creativity and new solutions.

Contributing to a wiki requires that students add content using a convergence of new literacy for the 21st century. Students cannot participate effectively in a wiki, solely using word processing application skills and traditional mental models of communicating ideas in lengthy, written reports for their professors. Instead wiki contributors combine written information chunked for the short attention span of diverse audiences reading content on the Web. Contributors compose well-designed digital, multimedia products that engage and link readers to suggested references. Posting these multimedia products means that the contributors are following cohesive multimedia practices, using proper file formats and sizing, and bringing awareness of multiple perspectives. Remixing and repurposing digital content means wiki contributors may find and modify existing Internet content. Therefore, contributing to a wiki also requires that students follow copyright and intellectual property laws.

Web 2.0 has also shifted attention from access to information to access to other people and the ability to facilitate social learning. The focus moves from attention solely on the content to a focus on the contributors of the content and the interactions that led to the development of the content. For education, an additional shift occurs from the focus on the content to the use and

application of the content in authentic activities. Through interactions with the content and others, contributors acquire the practices and norms of established practitioners.

Uses of Wikis

Increasingly instructors use wikis to meet a variety of purposes. Instructors often design wikis to serve as case libraries, project e-portfolios, method of assignment collection with or without peer review, spaces for ongoing discussions, brainstorming, and group story creation. Just as frequently, students themselves create wikis that serve as repositories, reflection spaces, and group spaces to share information, resources, images, and work products.

Using a wiki offers other advantages. Wiki content and resources are readily available outside of the university course management system (CMS) for students' use during the course, making logging into the CMS to collaborate unnecessary. Content and resources also remain available for students after they complete the course. Graduates can continue to contribute, edit, and revise wiki content as they gain experience and perspective as working professionals. With the accumulation of reliable content from continued contributions, wiki content can grow to contain and offer reliable supportive information in the form of mental models, stories, cognitive strategies, feedback from classmates and instructors, best practices, and just-in-time information in the form of procedural steps and rules suggested for integrated learning as suggested by Van Merriënboer, Bastiaens, & Hoogvel (2004). The resources include the tacit knowledge of paradigms, viewpoints, beliefs, concrete know-hows, craft and skills as well as explicit knowledge of the profession (Davenport & Prusak, 2000). The wiki becomes an important community of practice resource, linking students and professionals. The content stays current and correct as everyone has the ability to correct errors and elaborate on concepts to make the content relevant and valuable.

Before wikis, finding, creating, collecting, and sharing the supportive information was exclusively the domain of the instructor. Web 2.0 technologies, especially wikis and blogs, now provide the potential for learner creation and contribution of the supportive information in the form of resources, documents, and skills needed and used by learners and their classmates. With many contributors and unlimited access by readers, reviewers and editors serve essential roles, ensuring the quality of the content.

Structuring the Wiki and Its Content

Not only is the quality of the content posted on a wiki critical. The structure and navigation of the wiki become important especially since the wiki content is available to students past and present as well as local and international professionals, creating a community of practice, over the long term. To make the wiki relevant and valuable during the course as well as after, serious thought must be given to the structure of the wiki and the organization and navigation of the wiki content. A well designed wiki is structured, so learners can navigate, access, and post small chunks of text yet are able to understand the content chunks as part of a larger work (Ferris & Wilder, 2007). The structure of the wiki guides the format of the content, contributions and linking, and the processes and rules for preparing and contributing content. These are important considerations. Preparing content for the wiki requires that learners think through how content is organized and related, enabling them to better structure knowledge and their mental models of the purpose and value of a wiki.

The Theoretical Framework

The wikis studied were framed within the context of the courses which integrated them. The context we examined included the instructors' motivations, learners' initial beliefs about wikis, purpose of the wikis, the processes the participants used to contribute to the wikis, and the mental models with which the participants approached the wiki. The theoretical perspective of distributed cognition underlay our analysis of the interactions that took place as participants researched, wrote, and shared information to meet the wikis' purposes as set out by the instructors. We drew from distributed cognition, which asserts that knowledge "comes to life" during human activity, and the resources that shape and enable human activity are distributed across people, symbolic and physical environments, tools, artifacts, and situations (Pea, 1993, 50). Knowledge becomes useful when it is relevant to a group of people at a particular point in time. The wikis were designed to publish useful, relevant knowledge for current and future learners in a permanent place that would continue to exist after the end of the course. Keeping the knowledge current, relevant, and reliable is an essential component of knowledge that comes to life during human activity and becomes particularly essential with wikis.

Summary

While wikis are claimed as powerful learning tools, few studies have examined if wikis enhance learning and how learners feel about contributing to wikis as a course requirement. This article examines learners' experiences with two wikis incorporated into two graduate courses in a southwestern university in the USA.

Research Questions

Do wikis currently meet the claims stated above about increased collaboration and enhanced understanding of knowledge through contribution of more diverse perspectives and revisions to improve the accuracy of the content? The objective of this qualitative study was to uncover participants' experiences as wiki contributors and reviewers in two graduate-level courses. The research questions that this study addressed were:

- How do graduate students describe their experiences contributing to a course wiki?
- How do graduate students decide what content to create and contribute, when to edit classmates' contributions, and how to structure the content and wiki site?

Method

Setting and Participants

Participants in this study were 13 graduate students (3 males and 10 females) enrolled in two graduate-level courses in law and education that incorporated course wikis. The courses were identified by convenience sampling. Faculty members identified as teaching graduate-level courses using course wikis were contacted by the researchers to describe the study and solicit the participation of their students.

The education students who participated in this research study were enrolled in an online course that taught students to analyze, design, develop, and evaluate two modules for an online

academic course or training program of their choice. The instructor for the education course used the wiki for two purposes: (a) to provide the opportunity for the students who would become future instructional designers to develop familiarity with wikis and (b) to use the wiki as a reflective space, where students would evaluate information and vet content and resources.

The education instructor based the structure and organizational framework of the wiki on the ADDIE (Analyze, Design, Develop, Implement, and Evaluate) instructional design model. The ADDIE model, therefore, determined relevant content and the structure and appropriate placement of the content. Students were required to contribute at least monthly to the course wiki and one of the contributions had to be a podcast.

The law students were enrolled in a clinical law program, which serves as one of the state's largest law firms for a broad spectrum of low-income clients. Through the law clinic requirement, students develop professional skills, values, and practices as they solve actual client legal problems. New law students and supervising faculty rotate through the clinic each semester. Because the students graduate and different faculty members are assigned as supervisors, the knowledge gathered one semester to represent a client is lost and must be recreated the following semester.

The clinic wiki was created to capture as much of the nitty-gritty of practice as possible so that students and professors would spend less time finding content and more time developing skills, cultivating judgment, and serving clients. The initial idea for the clinic wiki grew out of one student's plan to draft a new Children's Court Practice manual. The idea changed to create a wiki instead and have the other students create content for other practice areas of the clinic. Collaborating through the wiki from semester to semester, students and faculty intended to build on the work that was done so that the information became increasingly more complete and useful to students and attorneys representing poor, working people in the state.

Procedure

The two researchers involved in this study interviewed the 13 participants from both courses using semi-structured interviews to gather participant perceptions of their experiences related to:

- Prior experience using wiki technology
- Collaborating to create and review wiki contributions
- Deciding what content to contribute
- Learning from others' wiki postings
- Editing others' contributions to the wiki
- Comparing a wiki with a course management system

- Suggesting effective uses of wikis in education
- Sharing participants' potential future use of wikis

The semi-structured interview guide is included in Appendix A. The participants were interviewed during the summer and fall of 2007. Students were invited to participate on a voluntary basis after receiving a full explanation of informed consent and confidentiality.

Demographics were collected to document characteristics of the sample. Three males and ten females participated. All were enrolled in graduate level courses at the University of New Mexico.

Data Analysis

We used two methods of analyzing the data collected from the 13 interviews to understand the anecdotes the participants shared with us. Each interview was audio recorded after first obtaining each participant's consent. Each interviewer took notes during the interviews. We transcribed each audio recording.

First the transcripts and interview notes were analyzed using an issue-focused analysis approach to coding data, sorting data into categories, labeling the themes emerging from the categories as each transcript was analyzed. Categories and theme labels were continually compared, distinguishing new data from subsequent transcript analysis, and revising the categories and theme labels. Writing using the inclusive integration approach knitted the codes and categories into a single coherent story.

The themes and their meaning that emerged are listed below:

- *Wikipedia* represents the mental model and the experience.
- Wikis sound like work.
- Wikis require students' being self-directed.
- Wikis reveal the experts.
- Editing other students' work is uncomfortable.
- The "open access" to wiki content compared to a learning management system.

The six themes and their meaning are discussed further in this article after the presentation of the data.

The second method of analyzing the data collected was the use of tag clouds, using the software, Tag Cloud 1.01 as a data visualizer. The typewritten transcripts were uploaded into the Tag Cloud software. The software displayed tags in weighted format in alphabetical order. The more frequently a word was spoken by interviewees, the larger in size and boldness the word was displayed in the tag cloud. Figure 1 below shows the final tag cloud generated.



Figure 1: Final Tag Cloud Generated. Tags were bolded and weighted according to the frequency with which wiki participants spoke the words shown.

The tags or words served as a second categorization method for the content of the interviews. The visual depiction of the words served to break down the interviews to provide meaning behind the words themselves. The tag cloud results indicated that the following words appeared most frequently in the analysis: added, collaborate, contribute, didn't, edit, others, people, posted, required, students, used, wiki, and work. The tag cloud visually indicates that students did not edit what others posted. Students did use the wiki, contribute to the wiki, and felt the wiki worked. The tag cloud corresponds with the categories and themes generated by the first analysis using the issue-focused approach. Our analyses of both approaches are discussed in the Findings section below.

Results

People operate and behave in accordance with the assumptions they hold as well as with the mental schemas or models they use to understand the world. Both teachers and students come to graduate courses with assumptions, schemas, and expectations regarding well-defined roles they have learned and undertaken throughout their years in the education system. In this study as well, student experiences with and assumptions, beliefs, and mental models about learning, knowledge, technology, course work, and wikis in general influenced their initial thoughts about creating and contributing content to a course wiki. Prior experiences in higher education and with technology show that the opportunity and requirement to contribute to the wikis are related to larger social relations that subsequently influenced the wiki's character.

Theme 1: Wikipedia represents the mental model of participants and their experience.

Students brought *Wikipedia*, http://en.wikipedia.org/wiki/Main_Page, to the courses as their model of a wiki and how it works. They came from the perspectives of users of *Wikipedia*'s content as well as students who had heard about wikis. A third of the participants reported that they had never used a wiki before other than looking up information in *Wikipedia*. Participants were familiar with the fact that anyone who would like to contribute to *Wikipedia* can. Applying the benefit of open contributions to *Wikipedia* to the course wikis, some participants perceived contributing to a course wiki as an "exciting benefit" of the course. Participants could learn to use the new technology to its full potential. Others had heard concerns expressed that open contributions could cause *Wikipedia* and their course wiki to become unreliable. They felt the wiki would be more reliable if prepared by the instructor or another authority. Initially when students did find an error, inconsistency, or broken link on the wiki, they reported it to the instructor rather than correct the error themselves. They initially perceived wikis as a place to access content provided by others. This suggests that they initially may have perceived themselves going into the courses as passive consumers of wiki content provided by authorities rather than as active creators.

Theme 2: Wikis sound like work.

Of the 13 participants, 31 percent were uncertain about the requirement to create and maintain a wiki when the idea was introduced to them. Participants expressed to interviewers that they were initially hesitant about the wiki assignment. They didn't know what creating and maintaining a wiki would entail and were unsure how much work a wiki would create for them during the semester. They felt they were already facing an overwhelming workload in their courses, and the time required to create and maintain a wiki "would significantly increase the time commitment to the class." One felt creating and posting to a wiki "detracted from his and his classmates' opportunity to learn course content and instead required them to help those who would be enrolled in courses to follow."

Additional anxiety was caused by a lack of initial detail presented by the instructors about using a wiki and the wiki assignment. Participants wondered whether posting content to a wiki "would duplicate something that the learning management system already does." One felt burdened by the assignment. When probed, her feelings revealed her personal feelings towards the course in general.

Not all participants experienced the same level of anxiety. Others expressed a feeling of excitement in learning to create a wiki as well as in the opportunity to serve as information hunters and gatherers for each other (Rheingold, 2002, 116) in a wiki "*which would benefit students to come after them.*" Not only were they interested in using the technology, they were especially intrigued by learning how people "work interactively to create original work." While they were excited to learn and use the new technology, they recalled prior experiences learning to use new technology and wondered if they would experience the usual learning curve associated with new technology. Initially many did experience trouble posting their first contributions to the wiki. The following quotations reflect the initial concern expressed by both participants in the law clinic and in the education course as well as the relevance and excitement the wiki offered.

I was unsure about the wiki project when it was introduced, mostly because the Clinic was already overwhelming, and the prospect of adding another time-intensive project was not appealing. I did like the idea of having something like a wiki for the clinic because of the difficulty we had in accessing the basic need-to-know information at the beginning of the semester.

I was excited to try the wiki in a group.

I was concerned about how much time the wiki would take, but I felt we could use the wiki for its full potential. I thought it would honor the individual expertise and interests of group members.

This second theme is closely related to the participants' assumptions and prior experiences with learning and technology that participants brought with them from other courses. The concern about the amount of course work, the amount of time and commitment to learn new technology, and the relevance and resulting value to participants themselves framed their initial reactions to the wiki assignments. It is striking that few participants talked about their prior, positive experiences of sharing, socializing, and collaborating in other graduate courses.

Theme 3: Wikis require students' being self-directed.

All participants posted content to the wikis as requested by the instructors. However, deciding what to contribute to the course wiki varied among the students. One student reported that the professor assigned students to create specific wiki pages and told the students the relevant content to contribute. She, therefore, complied with the professor's directions.

Other students reported that they decided what content to post by reviewing the existing content posted on the wiki and then taking the initiative to determine the important content that was missing. They also analyzed the problems they and other students were having and posted material designed to fill the gap or help others resolve problems. The following quotations reflect strategies individual students used when determining content appropriate for posting to the wiki.

I looked at what everybody else posted and followed their examples as I wasn't sure what we were supposed to put on a wiki.

I shared what I learned and what I thought had the potential to be useful for others. I'd ask myself, 'Is this going to be useful for someone else?'

I posted ideas that were in my mind.

I saw the wiki as an organic process from which themes emerged, and I looked through the postings, heard about something outside of class, researched it more and posted on it.

My postings were based on my past experiences, my past struggles with WebCT, and posted what would be a best fit for others, so they could learn from my past struggles.

The experiences of the learners in this study reveal a variety of ways learners use to approach creating content for a wiki. When instructors prescribe specific content, the learners

responded by posting the expected content. When instructors were less prescriptive, participants relied upon themselves and their questions about or problems with the content to decide what information was needed to help themselves, their current classmates, and learners to come after them.

Theme 4: Wikis reveal the experts.

Participants reported that they did read and use each other's contributions. Participants came to identify their classmates as experts in a topic after reading their classmates' contributions to the wiki. This was interesting in light of the concerns expressed about the accuracy and reliability of the content posted on the wikis.

The wiki became a compilation of a lot of good information like Cliff Notes.

All contributed good expressions and good ideas; I could take away from their strengths.

I found the wiki posting to be an improvement over discussions held in the learning management system.

People put up better developed pieces to the wiki, and we gained a deeper understanding of others' interests.

The last two comments are interesting for two reasons. First, one student likened the wiki to a threaded discussion board used in the course's learning management system (LMS) and found the wiki content more valuable. Possibly, the value came as a result of the participants' developing better content for the wiki as it could be made public while content posted to the password-protected LMS could not. Having the ability to see their classmates' contributions to the wiki pushed participants to create higher quality work as expressed by this statement: *"Their work made me re-edit my mp3 file, so it would be of the same high quality."*

A second interesting idea is the statement that the contributions helped participants gain a deeper insight into the interests of their classmates. There is a sense that the wiki did not serve solely as a Web site where information was posted; it developed a community of people who shared their interests and constructed knowledge.

Theme 5: Editing other students' work is uncomfortable.

Three students edited their classmates' work. However, the majority of participants stated that they did not edit their classmates' work because they thought doing so would be perceived as "offensive" or "disrespectful." Most agreed that they did not edit other people's postings as they felt to the best of their knowledge that the content posted by others was correct and accurate. They also felt they lacked the time to edit others' work, for participants recognized and valued the time invested by their classmates to learn the posted information through research and interviews, to organize and write clearly and effectively. They felt revising others' work would be disrespectful of the author and time devoted to that content.

One participant did edit content that others contributed to the section of the wiki for which she was directly responsible. She felt ultimately responsible for the content's accuracy and objectivity. Two participants mentioned that they posted comments asking for more explanation about the work that their classmates posted to the wiki, such as, "*What do you mean by this?*" or "*Here are more materials related to your posting.*" Most participants reported that they did not edit others' work as editing was not mentioned as a course requirement by the instructors.

In contrast, however, participants also felt that in order for the wiki content to be reliable, review and editing were essential, especially for a wiki built while learners were in the initial process of constructing meaning early in a course. Because students are contributing content as they learned and read, information posted by students may be incomplete, lack a good foundation, or represent inaccurate knowledge structures. One participant suggested, "*While students are learning, the technology and process of creating a wiki could be a collaborative learning activity. But people who are learning don't have the big picture.*" Editing and review of the wiki content by the instructor and questioning by classmates are, therefore, essential.

A good question to ask is why the participants with many prior experiences in higher education did not view challenging, reviewing, and editing the wiki contributions of their peers as opportunities they could use to "think critically, exchange views, challenge, authenticate, verify, or debunk" (Tapscott & Williams, 2006, 47).

Theme 6: The "open access" to wiki content compared to a learning management system.

"Open access" held two meanings for the participants. First, open access meant that students had the ability to contribute content. Comparing the ability to contribute content to a wiki with posting content in WebCT, students found the wiki to be interactive and modifiable by students. Whereas, a learning management system like WebCT Vista permits only the instructor as the recognized authority to create, post, and modify content. Participants found this meaning of open access to be both a benefit and a potential problem as reflected in the following quotation.

There is always the possibility that a student will modify the wiki based on incomplete or inaccurate information, thus, disseminating bad information to other students which they will then rely on. WebCT can only be modified by the professor, so there is more quality control over what is available.

My concerns about the clinic wiki is the possibility of inaccurate information being disseminated leading to errors or the wiki becoming so massive that it is impossible to efficiently access the information. Because anyone can modify or contribute to a wiki, I would be skeptical of relying on wiki information.

The second way participants used the term, open access, in this study referred to the ease with which students could log into the wiki, find, and navigate content. Access to the wiki felt "open" while the learning management system and the number of clicks required navigating content located within a learning module felt "closed and hidden."

Conclusion and Discussion

Setting up a wiki takes little time. Both instructors selected *pbwiki.com* and set up the wikis themselves. Resources used were instructor time, the wiki site, and \$100 when the multimedia content exceeded the limits of the free wiki.

Content posted to a wiki does not mean it can be absorbed and memorized any more easily than content printed in a book or spoken in a lecture. Understanding content and constructing knowledge come through engagement with the content, through discussion, by asking questions and weighing the answers, and discovering exactly when that content is relevant and useful.

For those participants who wanted to discuss the contributions to the wiki, the wiki was more than a Web site with content. The wiki served as the location for a community devoted to its purpose of finding information related to its practice. Those participants saw the wiki as a group of people, who interact, share interests, learn together, and in the process develop a sense of belonging and mutual commitment to the wiki.

Designing wikis to actually be collaborative workspaces and guiding students to feel confident about editing others' contributions require much more investment of thought and planning. Participants informed the researchers that wikis require negotiated "*incentive/need*," "*a passionate community*," "*fanatical reviewers*," and "*more uniformity*." Meeting those expectations will require more than an instructor saying, "You are also required to post and edit each other's postings."

The education students seemed to view themselves as a group, who wanted to be involved in the wiki from its inception, having input into its purpose, structure, and rules for posting to the wiki. They preferred that the instructor in the future establish a more formal orientation to the wiki, rules, roles, and expectations regarding postings. They brought the mental model of an online conversation to the wiki; they felt they were engaged in an online conversation and wanted the ability to discuss content shared on the wiki rather than merely read it. They requested that the teacher establish clear roles, contributors, and editors with roles rotating throughout the semester to better balance the workload. They felt that possibly mentors could guide learners as they posted content. They also suggested the use of tagging the content to more easily search and find information as the wiki grows.

The initial attitudes of both groups towards wikis did change. Students gained familiarity with wikis and could see them as a great tool for certain purposes. Students did begin to change their assumptions and mental models about wikis, learning, and contributing to the learning of those who come after.

I am more familiar with them and think they could be a great tool for certain things.

I think they can be a great learning tool. I know that if it were used properly, the learning curve of each student walking into the clinic would be much faster and would ease students into the program more effectively.

For a practical course, a wiki is very useful in that it tells students what to do. It creates a way for students to figure out what they need to know without having to ask 50 questions along the way. Ex. . . . where to file; what to file; where the court room is.

A concern that continued to linger throughout the semester, however, focused on the reliability of the content posted to wikis by learners in the early stages of building their knowledge structures about a concept or procedure and the context in which it becomes relevant. As revealed by the participants' comments, some were uncertain what to post and watched to see what their classmates posted. Others strictly followed the professor's instruction; others posted content that solved their own questions about the content. These strategies could result in the wiki's becoming a collection of facts rather than providing a cohesive knowledge structure. Two students alluded to the importance of the content structure:

My thinking was this is a great way to put information up really quickly; at the same time it's not really uniform and it seemed kind of sloppy.

My concerns about the clinic wiki is the possibility of inaccurate information being disseminated leading to errors or the wiki becoming so massive that it is impossible to efficiently access the information.

The real challenge is facilitating the productive interaction among the wiki members. The wikis created a sense of professionalism and reflected a "collective picture of what we all knew" and "reinforced the ideas that we had something to contribute." Although posting content to the law clinic wiki was initially required, it has since become self-sustaining through student interest. The instructor needs to set this stage; otherwise, prior experiences of group work, teacher as authority, and posting content that others will learn from but "not me" will prevail.

The instructor must stay involved and guide the learners as they post and review the contributions. As a participant noted, *"There is too much room for bad information or confusing information because students are contributing during the learning process and may not have complete information or understanding."* The learners need the scaffolding of the instructor and the learning community involved in creating and maintaining the wiki.

Recommendations for instructors and mentors who are considering using wikis include the following:

- Students and instructors collaboratively plan the purpose of the course wiki and its structure
- Students and instructors collaboratively structure the content through an outline or concept map
- Students and instructors set out guidelines for creating content and deciding when content is ready for review and publication be established
- Roles, tasks, and timelines be established, assigned, and rotated
- Support provided through course discussions, job aids, FAQs

- Resources and discussions be held on critically reviewing others' work and making mindful recommendations for edits and revisions
- Orientations be held on how to write for a wiki, contribute content, post and format, and edit

Lastly, both the Tag Cloud and the traditional research analysis results both indicated that students did not feel comfortable editing other students' work. Instructors need to address the role and importance of editing in wiki creation with the students and emphasize that students can easily revert to prior versions using the history tool when errors are made.

Limitations

This study was conducted at a time when very few courses at the university used wikis. Therefore, this suffers from a small sample size and the analysis of two course wikis.

References

- Davenport, T.H., & Prusak, L. (2000). *Working Knowledge: How Organizations Manage What They Know*. Boston, MA: Harvard Business School Press.
- Pea, R. D. (1993). Practices of distributed intelligence and design for education. In G. Salomon (Ed.), *Distributed Cognition: Psychological and Educational Considerations* (pp.47-86). Cambridge, MA: Cambridge University Press.
- Rheingold, H. (2002). *Smart Mobs: The Next Social Revolution*. Cambridge, MA: Perseus Publishing.
- Tag Cloud 1.0 (2007). Tag Cloud Generator (Version 1.0). [Computer software].
- Tapscott, D., & Williams, A. D. (2006). *Wikinomics: How Mass Collaboration Changes Everything*. New York, NY: Penguin Group.
- Van Merriënboer J. , Bastiaens, T. & Hoogvel, A. (2004). Instructional design for integrated e-learning. In Wm Jochems, J. Van Merriënboer, and R. Koper (Eds.), *Integrated e-Learning: Implications for Pedagogy, Technology & Organization*. New York, NY: RoutledgeFalmer.
- Weinberger, D. (2008). *Everything is Miscellaneous*. New York, NY: Times Book.
- Wilder, H., & Ferris, S.P. (Spring, 2007). Using a wiki to write about wikis. *Journal of Electronic Publishing*, 10(2). Retrieved April 10, 2008, from <http://quod.lib.umich.edu/cgi/t/text/text-idx?c=jep;cc=jep;q1=Wilder;rgn=main;view=text;idno=3336451.0010.202>

Appendix A

Questions asked:

1. Please describe your prior experience, if any, with wikis before you enrolled in OLIT 538.
2. What were your feelings about participating in creating and maintaining a wiki when the ideas was introduced?
3. Was deciding what to create and contribute a reflective activity? If so, how so?
4. What did you learn from other people's postings to the wiki?
5. Did you review and edit other people's postings to the wiki? Why or why not?
6. How did you use the wiki to disseminate information to the class?
7. How does a wiki compare to working with a content management system like WebCT Vista?
8. What do you think is a good use of a wiki in education?
9. How did your attitude toward wikis change?
10. How did you go about collaborating with others to create and build the wiki?
11. What else would you like to tell me about your experiences creating and building the wiki?
12. How will you use wikis in the future?