Wikis Work: Enhancing Student Engagement with Collaborative Technology

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ABSTRACT

This paper documents experiences using a wiki in teaching large undergraduate classes. A wiki is a web-based tool used to enhance student engagement and collaboration. This paper presents experiences using wikis as the major term assignment for two senior classes; one in human geography, the other in earth sciences. The advantages of using wiki technology are examined, as well as some of the challenges presented, including evaluation. While some of these challenges were significant, the experiments were successful enough to warrant further use. The paper concludes with some recommendations for others considering using wikis in their courses.
Introduction

Those involved in the teaching of geography and earth sciences (among many other disciplines) at the university-level have seen dramatic changes in the last decade with respect to the way that students learn (Côté and Allahar, 2007). In the era of Web 2.0 (the use of second-generation web-based communities and services such as blogs, wikis, and social networking sites which collectively aim to foster creativity and collaboration) the use of traditional term papers, assignments, and other evaluative tools is less relevant than in the past.

In an effort to tap into these Web 2.0 sources of creativity and to encourage student collaboration in an innovative way, the authors experimented in 2007 by modifying two courses to include major assignments involving wikis. These two courses, while both offered by the School of Geography and Earth Sciences at McMaster University (Hamilton, Ontario), were quite different in terms of student enrolment and discipline focus. One course was a large enrolment (approximately 90 students), third-year course on the social geography of cities (Geo 3HZ3), while the other was a small (approximately 35 students), fourth year course on glacial sedimentology (Geo 4G03).

This paper presents the experiences of the authors in using a wiki as the major term assignment for senior undergraduate classes in both the social and natural sciences. We address the advantages of using the wiki as well as some of the serious challenges it presented, not least of which was evaluation. The paper concludes with some recommendations for others considering using wikis in their courses.

What is a Wiki?

A wiki is a website that allows visitors to add, remove, edit and change content (Wikipedia, 2007). It is one of a growing species of emerging technologies that mark a sea-change from the characteristics of the original World Wide Web to the new Web 2.0. Typical of most Web 2.0 applications, a wiki emphasizes collaboration and end-user responsibility for content creation. Wikis are not read-only documents published by authorities—they are dynamic democratic creations, dependent on collected contributions from a broad community of participants. The best known example is Wikipedia, a popular online encyclopaedia written by voluntary contributors all over the world.

The wiki concept was originally developed in the mid-1990s as a discussion and resource management device for software developers (Leuf and Cunningham, 2001, p.15). Earliest applications saw wikis used within an enterprise, to facilitate sharing of ideas and development of collaborative information repositories and reports. Generally these wikis were restricted to the group members involved and were mounted on intranet sites.

Adoption of the technology to educational use started in about 1997, with the CoWeb project at Georgia Tech. A list of early student uses of CoWeb suggests many functions similar to a course management system, with collaborative data gathering, information sharing and writing being the most common application (Georgia Institute of Technology, 2000).

Evolution of technology gradually reduced the very high programming overhead required for the early wiki explorers. According to Klobas (Klobas, 2006, pp.16-17), the major period of wiki evolution occurred between January 2001 (with the launch of Wikipedia) and the end of 2005. During this brief time-span, wiki editing became simplified to the extent that users no longer required any knowledge of hypertext markup language (html) coding; commercial softwares were developed and their functionality expanded; the ‘wiki appliance’ was introduced, which is a turn-key server
configuration containing all necessary software to run a wiki; and ‘wiki farms’ were developed, allowing remote hosting and setup of a wiki within minutes.

By 2004, discussion of wiki uses in education began to appear in the literature (Augar et al., 2004; Lamb, 2004; Schwartz et al., 2004). Schwartz et al. describe a survey of 24 wikis in use in university settings:

“Many of the wikis surveyed are currently in the early stages of development. Most are purely text-based with few images. In general, university wikis appear to be used more by specific departments or for particular topics, than for campus-wide uses (e.g., institutional information). The use of wikis for administrative scheduling, faculty use, learning support materials, and course management, appears to be rare. Of those we examined, more dealt with activities, events or clubs, than with curricular issues. Project management is a fairly common function, by course/group projects in particular fields including music and languages. University-based wikis seldom appear to be used for entertainment, student feedback, or journaling purposes.” (Schwartz et al., 2004, p.2)

Engstrom and Jewett (Engstrom & Jewett, 2005) describe an inquiry and problem-solving wiki assignment involving 11 teachers and 400 middle school students. Some of the concerns they report resulted from the novelty of the problem-based learning model, the students’ level of information literacy skills and limited access to technology, rather than directly with the wiki platform. Bold (Bold, 2006) describes the use of wikis for online interaction among graduate students in distance education courses at Texas Woman’s University, as a tool to increase students’ sense of connection and community. Grant observes that, as of spring 2006, “The use of wikis in education is still a relatively recent development, and the formal research literature on this subject is limited.” (Grant, 2006, p.2), and describes a history-based research project for students aged 13-14 in Gloucestershire, England

At the start date of the project described here (January 2007), there were still very few instances of wiki use to support curriculum content at the university level reported in the literature of information science or of education.

Wiki potential

One of the most frequently mentioned expectations of emerging Web 2.0 technologies, and especially of the wiki, is the fostering of collaborative group learning. “Wikis are thought of as tools for multiple authors rather than a single author. The authors of a wiki jointly edit pages to produce a single, collaboratively-authored resource.” (Klobas, 2006, p.2) Students can work on their assignments at any time and from any location using the Internet, and can meet “virtually” as their schedules allow. The dreaded group-work dilemmas of team members who do not meet deadlines or contribute their share are made manageable, as the postings of each individual are recorded with time-stamps for review and appropriate response by the instructors.

Through a process of group authoring it is expected that students will build and edit their wiki documents progressively, resulting in stronger final products by sparking idea development and collaboratively building on each other’s work. “People not only put their ideas in; they also build on the ideas of others, sharing information and collectively developing knowledge.” (Klobas, 2006, p.3) Used positively, the wiki is a valuable form of peer learning, allowing the instructors and all students to view content evolution over time and to contribute suggestions or resources to the communal effort.

Wikis are very appealing for educational use because they allow students to create and post web pages quickly and simply, with
minimal training or instructions. In theory, students should be able to concentrate on course content and research skills, rather than on hypertext markup language (html) syntax and file management.

They are also appealing for technology challenged educators. Unlike most highly-secured university servers, wikis hosted on Internet wiki farms do not require any administrative permissions in order to upload files or attachments. Site security is managed by the wiki host, and site etiquette (or SoftSecurity) is largely imposed by the participants “watching out” for each other. Inappropriate additions can be traced to their originator and the wiki can be easily reverted to an unsullied version.

Much has been written about the characteristics and educational needs of Net Gen students (for an introduction to the issues, see Côté and Allahar, 2007; Prensky, 2001; Oblinger, 2003; Oblinger and Oblinger (Eds.), 2005). They are identified as digitally literate, connected, social, comfortable with team work and achievement-oriented (Oblinger and Oblinger, 2005, pp.2.5-2.7). They like to participate actively in learning: “Rather than being told, Net Geners would rather construct their own learn¬ing, assembling information, tools, and frameworks from a variety of sources.” (ibid., p.2.12).

“The social nature [of] Net Geners, as well as their desire for experiential learning, implies that interaction is an important technique for colleges and universities to employ. The importance of interaction is not new; learning science has consistently demonstrated that students learn more when they interact—with material, with each other, and with faculty. The “talk, text, test” approach to teaching is not highly effective with most learners. Students do best when they actively construct their own knowledge. In addition, there is a positive correlation between interaction and student retention.” (ibid, p.2.12)

Most of these Net Gen characteristics match well with the potentials and opportunities offered by wikis. Wikis offer a platform for learning that is social, participatory, and requires much interaction with curricular materials in order to describe and display them for the understanding of others. Our decision to use this emerging technology seemed like a very good match to the needs of our students.

The two pilot courses

Wikis were tested as learning outcomes in two courses taught in McMaster University’s School of Geography and Earth Sciences during the Winter term (January to April) 2007.

Geo 4G03, Glacial Sediments and Environments, was taught by Dr. Carolyn Eyles, to 36 students. The Geo 4G03 students were assigned the initial data gathering for the “Canadian Glacier Inventory Project” (CGIP), an ongoing initiative led by Dr. Eyles. The research objective of the CGIP is to gather and analyse information on the form and extent of Canadian glaciers, to establish a ‘baseline’ against which to measure future changes in glacier form and ice margin position that may be related to global climate change. Each student group was assigned a geographic region of Canada and given the task of locating and organizing all available information about the glaciers in that region. Student feedback from previous Geo 4G03 classes identified a desire for their course-related research work to reach a broader audience. The wiki offered this opportunity, by allowing students to create a database that can be expanded by future researchers and accessed as a resource by a wide Internet audience.

Geo 3HZ3, Urban Social Geography, was taught by Dr. Michael Mercier, to 90 students.
The Geo 3HZ3 students were working on the topic “Segregation in World Cities”. In this case, each group was given a city and asked to report on the nature of its social segregation, be it based on racial, religious, economic or political dimensions. In earlier assignments within the course, students had learned how to create maps of segregation using ArcView GIS and calculate indexes of segregation using supplied data. With the wiki, student groups were challenged to find or tabulate their own data sources, produce maps, calculate levels of segregation, and to merge these findings with the existing research literature on the issues pertaining to their city. Groups then organized their findings into a wiki in ways that seemed most appropriate to them.

For both courses, the educational objectives would have been the same, with or without the wikis. The alternative student output for Geo 3HZ3 would have been a group report (term paper) and an in-class presentation. The alternative output for Geo 4G03 would have been presentation of research data in a mini-symposium format. The wiki alternative was suggested by the Geography Liaison librarian, as a way of incorporating an emerging technology into existing curriculum. Risk was minimized to mostly technological issues by working within a known pedagogical setting for the pilot project.

Selection of wiki and start-up

For many wikis exist, all providing slightly different features and functions. For our class use, we identified the following wiki characteristics as most important to us:

1) Remotely hosted. It was very important that students could upload and edit their work independently, without the need for staff assistance or for security clearance privileges normally required to access institutional servers.
2) Free.
3) WYSIWYG (What You See Is What You Get) interface. This means that students did not have to know html coding in order to create an attractive wiki page.
4) Minimal learning curve for participants. Again this was related to the ability of students to succeed in webpage creation quickly and without staff support.
5) Edit history, page comparison, user reports, backup or revert functions. These are functional elements that make it possible for educators to assess the students’ progress and activities, and to restore the wiki if sabotage or ‘accidents’ occur.
6) Discussion and comment areas. These were important to capitalize on the collaborative nature of the wiki technology.
7) Minimal advertisements.

The WikiMatrix.com website provides an excellent aid for selecting a “wiki farm” (i.e. a remotely-hosted wiki). WikiMatrix allows comparison of many available wikis, based on the end-user’s selected criteria.

Ultimately we selected Wetpaint as our wiki of choice for these class projects. Wetpaint offers a simple and attractive interface, with a minimum of commercial advertising. (Since this was written, Wetpaint has incorporated the option of “No advertising” for educational users.) It is extremely user-friendly, with clear and simple function buttons that resemble familiar word-processors. It offers a variety of user reports and tracking devices that make it easy to check students’ contributions by date or by user. Creation of wiki pages within Wetpaint is virtually intuitive, although a FAQ and some help are provided. Furthermore, Wetpaint is free and all wiki pages are hosted off-campus by commercial servers.

The initial wiki sites for the two classes were created by Library staff (one by the Geography Liaison librarian and one by the Map Collection library assistant). In each case, the staff member had no previous experience with wikis. Setup was extremely simple—a matter of
following a few on-screen prompts. Library staff populated the new wikis with an organizational structure of page “stubs” (just blank pages with titles) for the students to start with and some standard informational pages (e.g., “Copyright Matters”, “Finding Periodical Articles”, citation guides and links appropriate to the subject). The instructors provided the content for the home pages and “Instructions for Students”. Figures 1 and 2 illustrate the basic wikis.

**Figure 1. Basic wiki for Geo 4G03. Left navigation frame provides access to instructions and research resources, as well as to the page stubs for each student group.**

**Figure 2. Basic wiki for Geo 3HZ3, displaying the Research Resources page. Standard research instructions were supplied on start-up, and additional resources were added as students asked for guidance from the Library and the instructors.**
The Library staff member creating the wiki was automatically assigned the role of “Administrator”. Faculty members and teaching assistants (TAs) were “invited” to join the wiki as “Moderators”, and the TAs in turn “invited” the students to join as “Writers”. These different levels of participation determine what functions are permitted. The “Public” (i.e. those not ‘invited’ to participate by the site Moderators) may view and comment on any page, but cannot edit, add or delete information. “Writers” may edit any page, including those created by other students, and can add pages. “Moderators” can move, lock or delete pages and ban undesirable users. The “Administrator” can establish the page template, upload a unique logo, and change settings and permissions for the site.

Experiences and observations

Students in Geo 4G03 started work on their wikis as soon as the assignment was announced and worked steadily throughout the term. By contrast, activity on the wikis in Geo 3HZ3 was more uneven, with some students starting early on their assignment but most showing a flurry of activity towards the deadline date. Initially, this variation in activity was attributed to a difference in the class composition, Geo 4G03 being composed mostly of highly-motivated Honours Earth and Environmental Science students in their final year and Geo 3HZ3 being a much more varied group including some non-Geography students taking the course as an elective. Subsequent student comments in Geo 3HZ3 revealed that some groups had deliberately “held back” the reveal of their best ideas, so as to not have them copied by others. This was a very surprising revelation, in light of the general expectation that Net Gen students are deeply committed to collaboration and group process and that the wiki tool itself is all about collaboration. Clearly there are still residual elements of competitiveness among our students!

Library staff and TAs reported very few requests for technical help. Wetpaint exceeded expectations in terms of allowing students to create simple wiki pages without instructions or staff support. Some display problems were encountered when students attempted to paste heavily formatted Microsoft Word documents into their wikis. Wetpaint responded best when text was typed in directly or when only unformatted text was pasted in. More complex formatting effects, such as tables and text wrapped around graphics, were difficult to achieve and caused students some frustration. In using Wetpaint again, we will inform students of these limitations as part of the Instructions for Students.

Overall, content created in the wikis far exceeded expectations. The students, digital natives accustomed to slick graphics and ubiquitous audio, quickly incorporated photographs, colourful visuals and a multitude of web links into their wiki pages, amalgamated with the more traditional essay text and expected academic references to books and journals. Many students created their own maps, using ArcView and statistical data they found on the internet or in paper sources. In Geo 3HZ3, a number of groups linked to YouTube and streamed videos with sound, many of them with solid relevance to their topics. One particularly enterprising group interviewed a former native of Belfast about segregation and posted the video and sound to YouTube themselves, before streaming it back to their wiki (Figure 3).

Most students experimented with webpage navigation elements, such as Tables of Contents, Back and Next buttons, keyword tagging and a hierarchical navigation bar (left nav). Success here was varied and some efforts displayed more emphasis on graphics than on logic (Figure 4). But this consciousness of webpage structure, logical sequence and navigation was recognizable as a very important learning outcome of the wiki exercise. This
awareness was perhaps the clearest example of life learning skills gained, as students became more conscious and more critical of the devices that webpages use to draw them towards content (Figure 5).

Assessment

Faculty, the librarian and TAs met before the wiki projects were assigned to collaborate on the appropriate marking structure for the students’ products. Because the students’ potential adaptations of the wiki were unknown, it was decided for both Geo 4G03 and 3HZ3 that the marking schemes would recognize standard essay writing skills (completeness and analysis of content, information sources used, evidence of interpretation, organization and expression), artistic elements (creativity, originality, graphic design elements) and participation (number of comments, evidence of collaboration).

Geo 4G03 was graded on the basis of four components—a ‘concept map’ of the site, site content, data sources and an oral presentation. Each group was assessed on all components of the project and satisfactory performance was required in every component. However, individual groups were allowed to determine separately the proportion of marks allocated to each component (within reasonable limits and with approval of the TA) prior to submission of the first element. This provided the Geo 4G03 students with a certain degree of ‘ownership’ of the assessment scheme and allowed them to give more weighting to components of the project they identified as their strengths.
The oral presentation was the first component of Geo 4G03 to be assessed, about two-thirds of the way through term, and was intended as a 'progress report', identifying highlights of the group findings and problems/issues/challenges faced by the group. This was an excellent opportunity for students to further develop their oral presentation skills and explain to others what was and was not working for them. It also provided an opportunity for the instructor, TAs and Liaison librarian to question each group of students on the content of their wiki and to valuate their comprehension of the subject material. As this was a fourth year course, there was a relatively high expectation for the amount and quality of research, analysis and synthesis of information communicated through the final wiki product. Student groups were also able to ask each other questions during these oral presentations, often identifying issues that were of shared concern.

Each of the final Geo 4G03 wiki sites was thoroughly evaluated by the instructor and TAs, and detailed written comments were given to each group. The time spent on assessment of the wiki sites was approximately equivalent to the time that would be spent marking individual fourth year essay assignments.

The students in Geo 3HZ3 were graded entirely on the final wiki product, in a two-stage collaborative process that involved the faculty member, the Liaison librarian, the Map Collection library assistant and two graduate TAs. A marking rubric using Likert scales was initially used, with the rubic focusing on nine factors including originality, research quality, data analysis and aesthetic features. This traditional rubic proved too cumbersome and difficult to implement in the case of these wikis, and so rather than using a criteria-based evaluation an innovative two-stage evaluation process was used. This evaluation was considered a more summative evaluation of each group’s wiki.

Ethnically, politically and culturally diverse cities such as Rio de Janeiro, Jerusalem, New York, and Montreal were studied as part of the Geo 3HZ3 project. Given this diversity, access to data sources and existing literature was variable for each group. As such, it was difficult to critically assess the wikis without consideration of the advantages and challenges that each group faced. To overcome these discrepancies in available data sources, the wikis were graded...
according to geographic location, such that all wikis on American cities were compared and assessed together, and all Canadian cities were assessed and compared together, etc. This took into consideration the assumption that students would be working with comparable data sources, and would face similar research challenges such as foreign language or data availability.

After grouping the wikis by geographic area, they were ranked through a collective process which assessed their quality, variety of information resources used, as well as the selection, synthesis, organization and presentation of that material. An electronic classroom was used for this “marking meeting” so that each marking participant could view the wikis first individually at their own workstations and then collectively using a data projector. This collaborative process of marking worked extremely well, with instructional participants (faculty member, graduate TAs) contributing heavily on course content matters and the library participants (Liaison librarian, Map Collection library assistant) commenting on information resources and media literacy issues. The collective ranking process effectively dealt with the large number of projects, as well as the large volume of written work which was organized in a hierarchical (non-linear) structure.

The second stage of this evaluation process was a more traditional and empirical marking process undertaken by instructional staff exclusively. The wikis were evaluated based on the factual content presented, selection and use of resources, and organization and communication of the informational content. The rankings from the initial “marking meeting” and this second stage of the evaluation process were brought together to determine final grades for the wiki projects, with each student in a group receiving the same mark. Detailed comments from the instructional staff, including the rationale for the grades assigned, were provided to the groups.

### Reactions

Student reaction to the wiki projects was initially cautious. Many students were familiar with Wikipedia, but no student had ever contributed to a wiki themselves prior to this assignment. Most students found the exercise new and exciting, and reported that they had never done anything like this in previous years. Some commented that they had in fact worked harder on the course content as they became engaged with the wiki. One student remarked, “The CGIP project was a great interactive assignment—a good way to enhance our research techniques and increase[d] our understanding of glaciers in practical ways.” Another wrote, “CGIP project was very stressful as there were no boundaries which can be fun but stressful.” Many students were enthusiastic about the collaborative nature of the projects; one student, from the urban social geography class wrote, “I liked how we could read and learn from the other groups. Most term papers aren’t like that. You do your own thing, hand it in, and that’s it. This way I learned about other places, and got good ideas for our site.”

Some students reported technical difficulties: inability to copy/paste heavily formatted text from Word into Wetpaint; trouble embedding large images and formatting text around images; maximum size limits for images and file attachments, and issues with upload speed. Students who were knowledgeable about html and webpage creation reported frustration with the very simplistic tools and functions available within the wiki. One rather bitter student summarized this frustration when he/she wrote, “Wetpaint sucks! The interface is brutal compared to others out there, and man, it is so slow!” While these frustrations were clearly valid, it is not certain, despite this student’s claim, that other free commercial wiki farms are in fact better, faster, and any more user-friendly.
Faculty reaction to the wiki project was enthusiastic and both instructors reported that they would definitely use the technology again. They felt that students had been required to consider the potentially world-wide audience of the wikis and to write carefully. Students also had to consider physical organization and logical structure of their information, as well as content. The general calibre of the results was judged to be higher than the usual symposia or written term papers. In addition, there were far fewer issues with group dynamics compared with more traditional group assignments. The ‘creative’ aspects of the wiki project appealed to those students who may not otherwise have been fully engaged in the research process. All students felt they had something important to contribute to the project.

Both faculty members felt the wiki technology offered an excellent tool for engaging students, because it was new and never experienced before. Students liked having the opportunity to show their work to peers, friends and family and were proud of their completed products. Figure 6 illustrates a group of students having fun with the course content, as they model the zones of a glacier—they are engaged and clearly learning in a memorable moment.

Figure 6. Example of student engagement with the wiki projects. This group is having fun as they model the parts of a glacier. But they will probably retain this memory of course content far beyond the completion date of their assignment. (Illustration used with permission of the students.)
One difficulty was identified after the students’ wiki projects were completed. Both faculty members wished to retain a “copy” of the students’ work. Dr. Eyles wished to capture the Canadian Glacier Inventory Database content to develop a long-term project which eventually could include content added by colleagues and their classes at other institutions. Dr. Mercier wished to retain the original wiki content as a benchmark, but to erase the completed wiki so that the assignment topic could be studied again by a future class. It proved extremely difficult and labour-intensive to copy/paste content out of a commercial wiki like Wetpaint into an archival format and to clean up and re-establish links. It is also difficult to “erase” content from a wiki, by the very nature of the edit history and revert functions that it provides. Any future venture into wiki-based projects will consider this as one of the key criteria in selecting which wiki farm to use.

Library staff were also very pleased with the outcomes of the wiki projects. The project required an absolute minimum of technical or educational support from the Library’s instructional staff. Student questions in the Library focussed almost entirely on course content and finding appropriate resources. The wiki project presented an opportunity to work closely with two enthusiastic and receptive faculty members and their TAs, in teaching and learning roles as well as in more traditional information roles.

The success of these two projects has encouraged other Liaison librarians to promote wikis for course assignments in different disciplines. Additionally, McMaster University Library has now launched a wiki-hosting site on an internal server, to allow faculty more control over the long-term archiving of created content. This in-house wiki farm should enable greater collaboration between disciplines and with external partners.

Conclusions

The overall experiences of using wiki-based assignments in the two senior undergraduate courses reported here are extremely positive and are shared by all those involved—the instructors, students and librarians. Some of the greatest benefits of using the wikis lie in the provision of a tool that encourages and stimulates collaborative learning and also allows the development of ‘real world’ lifelong learning skills of high value to the students. In particular, the wikis allowed students to blend and develop research, communication and creative skills in a way that is not generally possible in a more traditional assignment format. The fact that the final product was publicly visible encouraged students to write and edit the content carefully, and in a manner that was interesting to a broad and diverse audience. This is a great improvement over traditional written assignments where students often produce bland and uninteresting commentary as they mimic what they perceive to be ‘good’ academic writing. Student groups that produced particularly high-quality wiki sites were diligent about the critical evaluation of content they posted, and all groups were careful to provide full citations for their sources of information. These skills, in addition to those involved in webpage design, organization and navigation, are invaluable to students graduating in the 21st century.

As well as developing essential skills, the wiki assignments also appear to have enhanced the students’ learning of the course content through their increased engagement in the learning experience and the amount of effort involved in creation of the wiki content. Although no quantitative data are available regarding enhanced learning of discipline content for either course, both instructors felt that students learned and retained more of the subject material than in previous years. Student responses to instructors’ questions during formal presentations in the Geo 4G03 course
demonstrated in-depth understanding of the subject content and a relatively high level of learning as evidenced by the students' ability to apply learned concepts to new situations. This was communicated particularly well through students questioning one another during the oral presentations, in which they were able to identify issues that were shared among the regions which each group was studying. The wiki projects also provided enormous benefits to the instructors and librarians involved through the opportunity to collaborate on a project that was new, exciting and stimulating.

Despite all of the benefits described here, wikis may not be suitable for use in all courses and not all instructors will enjoy or find use for them in their classes. The introduction of a wiki-based project requires a considerable degree of willingness on the part of the instructor to empower the student body—students are essentially in control of the content of the wiki site and the instructor must feel comfortable with this. As noted by Lamb,

“To truly empower students within collaborative or co-constructed activities requires the teacher to relinquish some degree of control over those activities. The instructor’s role shifts to that of establishing contexts or setting up problems to engage students. In a wiki, the instructor may set the stage or initiate interactions, but the medium works most effectively when students can assert meaningful autonomy over the process.” (Lamb, 2004, p.45).

Handing over the responsibility for generating and organizing wiki site content to students may also leave instructors frustrated with their inability to comprehensively edit and check for errors when large amounts of material are posted. In this situation, even though a broad-scale audit of the quality of the material can be conducted by the instructor and TAs, a note should be added to the site alerting users that the content was student-generated and largely unedited. Instructors considering the use of wikis in their courses may also be discouraged by the time-consuming nature of the assessment process. The type of assessment should closely align with the learning objectives of the course or project, and this will often determine whether emphasis is placed on assessment of wiki content or on presentation style. Assessment strategies involving student input and/or collaborative teams of evaluators can also be explored.

This first pilot of wiki use in undergraduate courses at McMaster University strongly suggests that there are no major technological impediments to the collaborative learning process and that in fact there are many benefits from their use in appropriate classes and assignments. Wikis provide a very flexible platform on which to enhance engagement of students in a range of collaborative learning projects that can cross disciplines and even institutional boundaries. It is exciting to consider the possibility of community, cross-institutional and international wiki-based projects being established where students can use their own local expertise to contribute to the collaborative growth and development of a significant body of information. Wikis work now—and have even greater potential for enhancing student engagement in the future.

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