Beyond Wikipedia: Wikis as Learning Tools

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Using Wikis for Teaching, Research, Administration, & Outreach

Wikis are powerful, web-based editing and collaboration tools, capable of supporting individual researchers and small groups, large courses, or entire departments and units. At Illinois, CITES, the Computer Science Department, and the Graduate School of Library and Information Science all provide wiki services that support teaching, research, and departmental web-based collaboration and outreach using a third party software called Confluence.

The Confluence wiki system is flexible, with a wide variety of layouts and choices for the look and feel of a particular wiki space; this is achieved by choosing from different built-in templates and a "theme builder" tool, which enables wiki owners to customize their own spaces. Additionally, the CITES wiki service also provides many other features, including blogs, the sharing of indexed file attachments across pages and users, automatic version tracking, and sharing and exporting of pages to e-mail, print, PDF format, text, and HTML.

What is a Wiki?

One simple way to think of a wiki is as a web page with an "edit" button that anyone can click and begin writing and editing, without the need of a word processor or other software. Wikis are web-based and as such, they make writing and editing text easy and collaborative. They utilize simple text editing modes, but also have more familiar word processing buttons. For example, one can select a bit of text and then hit the bold, italic, indent, or any of the other many formatting buttons to adjust the text style.

Wikis improve upon more traditional modes of writing collaboration like sharing paper and document files, e-mails, or having to meet face-to-face to carry out the project work. With a wiki, a group can meet once, set some goals, and then be able to contribute and revise content collectively simply by having access to a computer with web access. Additionally, instructors can then take advantage of the detailed history of who has done which edits and drafts in the wiki, enabling more specific instructor assessment of student work and contributions to group projects.

All wikis maintain a history of edits, from the initial words to the final version, and authors can review, compare, and revert to previous versions of the wiki page. This is the primary way that wiki authors and administrators can guard against vandalism and catastrophic mistakes - they can simply revert to the best, most "clean" version of that wiki document. The Illinois campus wiki services also allow users to place limits on who is allowed to view or edit wiki pages. As wikis have developed over the years, they have added functions we take for granted from other web sites and programs. The use of hyperlinks, tables, images, media, as well as incorporating the customized layout that we see with carefully designed web sites is present in wikis. Thus, the newest wikis can really be considered web-based content management tools that facilitate collaborative content creation.

Educational Uses

Wikis can be used to replace traditional web publishing models. With a wiki, a teacher or research group can maintain a course or lab web site without the help of special software, web designers, or web masters. Wikis can also help co-instructors and professors and TA groups communicate and collectively revise content for courses with large enrollments. Wikis are so easy to correct and revise that teachers report that they can fix typos and add announcements during class or while multi-tasking in the office - something that would be more difficult and time consuming with more traditional publishing methods.

Student group projects can also benefit from wikis since they facilitate collaborative authorship. Any group project, whether for researchers or students, would find a wiki an improvement over the older options of sharing hard copies, document files, e-mails, or having to meet face-to-face to carry out the project work. With a wiki, a group can meet once, set some goals, and then be able to contribute and revise content collectively simply by having access to a computer with web access. Additionally, instructors can then take advantage of the detailed history of who has done which edits and drafts in the wiki, enabling more specific instructor assessment of student work and contributions to group projects.

Above: Screenshot from Confluence Wiki Features (www.atlassian.com/software/confluence/features).
While the real power of wikis is seen in the collaboration it facilitates, wikis also provide individual instructors and students a great web-based scratch pad and working area, which can be more accessible and productive than having document files stored on one computer. Indeed, individual authors might even find the easy-to-use, web-based interface of wikis more personally productive than traditional word processing options, since many writing experts have noted that better writing comes from more writing, revision, and multiple drafts. Joe Grohens from The IC Center for Writing Studies at Illinois, believes that wikis can even help inside traditional writing laboratories by encouraging revising, editing, and improving collaboration in the process of writing.

**Research Groups**

For research groups, a wiki can serve as a particularly fertile workspace. Wikis readily support collaborative writing, and work well for document sharing within small or large research groups, especially when members are spread across multiple departments or even at different institutions around the world. The CITES wiki service is currently supporting several multi-institutional research projects, including Professor Ellen Moodie’s work on the Anthropology of Central America (Anthropology) and Professor Jennifer Cole’s Laboratory Phonology Committee (Linguistics).

Researchers who use wikis often comment on the time-saving aspects of the technology. Research notes taken using the wiki are immediately available for other group members to view and develop. By using the wiki’s built-in notification tool, group members can be informed by email each time a wiki edit is submitted. The automatic version tracking allows changes to be made without the worry that information might be lost, while providing a virtual document trail that can be used for tracking the project’s history. Taken as a whole, a wiki can help researchers spend more time collaborating, and less time managing their collaboration tools.

**Departmental Work**

Departments that shift to using a wiki to increase departmental collaboration will find that the technology is easy to use; it helps to reduce departmental bottlenecks, and integrates smoothly with existing desktop tools. The shallow learning curve allows faculty and staff members to begin creating and sharing documents quickly and with minimal training. The benefits of departmental wiki usage are similar to those outlined above. The wiki allows the work of creating and maintaining shared documents to be spread more evenly across the department, and the shared editing process tends to encourage collaboration and useful dialogue.

Andrea Bohn, assistant dean in the College of ACES uses the CITES Wiki to manage student handbooks for the ACES study abroad program. “A traditional document sits on our hard drive until it is ready for publication,” Andrea explains. “If we need input from others, we send it out, but then have to wait. With a wiki the content is dynamic and easily updated. I provide the document skeleton but current students and returnees can continuously update the information on that program. The best thing: The handbook is useful right from the start.”

Wikis are especially well-suited for hosting internal department information. When a shared department resource is moved or a policy is updated, faculty and staff often find themselves in the position of submitting the change to a department website maintainer, then waiting days or weeks for the update. With a wiki, these changes can be made immediately, and department documentation can be kept up to date with relative ease. A wiki is an ideal tool for storing everything from IT support documents to the department cafeteria’s daily lunch menu.

The Confluence wiki has been enthusiastically adopted by the Graduate School of Library and Information Science, the Illinois Informatics Institute, the Computer Science Department, and CITES. We believe that it will be useful for many other campus groups and programs.

**Public Outreach**

“Middle School Chemistry” is run by Professor Patricia Shapley of Illinois’ Chemistry Department, with content developed by her undergraduate chemistry students. The site includes well thought out lessons on chemistry-specific and related topics, e.g., the chemistry of batteries, wind energy, and the greenhouse effect. The Middle School Chemistry program highlights a use of our Confluence wiki system in the form of a public, outreach website.

**Other Examples**

Animal Science 438: Lactation Biology is run by Professor Walt Hurley. For Prof. Hurley, the Confluence wiki provides his ANSC 438 students with a web-based area for recording text and digital photographic observations of dairy cattle, a platform for student presentations on global lactation issues, and various other group work projects.

CS 519: Scientific Visualization is a wiki serving as a traditional course web site, with the added ease of collaboration and editing that wikis provide.

The Algorithms and Theory Group in the Computer Science Department provides a good example of a wiki used to support a departmental field of study, with information highlighting faculty, recent Ph.D.s, graduate students, and course offerings.

The Real-Time Systems Integration Research Group in the Computer Science Department illustrates how wikis can be used to support research teams.

The IT Pro Services Wiki is an example of a support unit (CITES IT Pro Services) using a wiki as an outreach and coordination tool in their efforts to support the many decentralized IT support staff on campus.

**Other Resources**

CITES Wiki Help
Request a New Space
wiki.cites.uiuc.edu/spacerequest

Getting Started
wiki.cites.uiuc.edu/wiki/display/HELP/Getting+Started+and+Help

Basic Help
wiki.cites.uiuc.edu/wiki/pages/listpages-dirview.action?key=HELP

Frequently Asked Questions
wiki.cites.uiuc.edu/wiki/display/HELP