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Disciplines
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Implementing a Wiki as a collaboration tool for group projects

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Abstract

A Wiki is a web-based tool that allows people to contribute, edit, and read content on a particular subject. Wikis are commonly used as repositories of information and technical notes in fields such as software applications development. This paper describes one professor’s experience using a free Wiki as a collaboration tool in an undergraduate course in project design and planning. In the past, students in this course worked together to produce a highly detailed project specification in printed format that was then used to create a significant project in a succeeding course. The Wiki was used to not only replace the printed document, but also as a tool to gather ideas, make decisions, and capture knowledge.

Introduction

A Wiki is a relatively new service that is readily available on the World Wide Web that allows for the creation and management of content by anyone who is able, and hopefully qualified, to contribute. Perhaps the best known Wiki is the Wikipedia (http://www.wikipedia.org), which is the Web's largest and most popular reference site. The Wikipedia, itself has become the subject of much debate in academe because of the means by which any person can contribute to the reference with no systematic editorial oversight or fact-checking mechanism. However, if the Wikipedia can be upheld as a model for education one need not look at the legitimacy of its content, but in the ways in which it empowers individuals to supply and edit said content with little or no experience in Web authoring. As an assistant professor of media arts, I was curious to know if this model could serve as a means for collaboration and knowledge capture in my courses so I implemented a free Wiki into two courses during the '06-'07 academic year.

Context
I teach MEDA 360 and MEDA 350 in sequence every fall and spring term, respectively at my institution. The first course introduces students to the planning and design of a major hypermedia project for a real client who has an actual need for such an application. Throughout this 14-week process, students are taught to use industry standard tools and methodologies from the field of project management throughout their planning activities. The first term culminates in the creation of a comprehensive written project specification and a proof-of-concept multimedia prototype, which are delivered to the client for approval. The second course resumes this experience in the spring by changing the students' foci from planning to implementation. Every decision conceived and recorded during the earlier term is brought to life in a development environment in which students find themselves managing a variety of tasks -- from creating content to writing the underlying code -- under the guidance of a project manager, in this case, the instructor.

The project being undertaken during this time was a Web-based electronic portfolio for the media arts department, itself – this was the first time in the last nine years that the class project was for the academic department that was offering the class – and would feature over 20 samples of student work in formats including streaming video, PDF, Flash, and MP3. The client for the project was Dr. Dave Cassady, an Associate professor in the department with a 28-year tenure at the university.

The project specification created in the fall term is designed to reflect many of the best practices in Web site pre-production, and the model recommended in the course text, *Web Project Management*, by Ashley Friedlein (Morgan Kaufmann Publishing, 2001). The “spec” includes ten major sections and generally runs 30-40 pages not including appendices. The class, which averages 9 students, develops the entire spec during the final six weeks of the term, with students holding both major and minor responsibilities for its development. For example, one student may be the lead author of a major section such as “Creative requirements” while also being responsible for writing content for a smaller sub-section such as “User acceptance testing” in the Test plan, another major component of the specification.

**Recognizing an Opportunity For Change**
Though the project specification serves as an important learning opportunity for the students, its real purpose and importance as the documentation for the development of the project was not being realized by previous classes involved in similar work. The spec is a fairly long reference that is distributed to each student at the start of the spring term in both printed and electronic format. As the students begin the formal development process they are supposed to refer to the spec whenever a question about their immediate responsibilities arises, and they are to record all modifications and additions to the project in the spec as they come about – a standard practice.

It became very clear that the spec was not being referenced nor updated during the development process. In fact, students were relying on knowledge within the team to answer questions, such that over the course of the term, specific team members became the “go to” people for certain questions regarding the project’s design. When the “go to” person was not available, students would rather comb through portions of the already-developed project in search of the setting or property they desired than locate, open, and search through the most recent version of the specification.

**Why a Wiki**

The concept of a Wiki serving as the vessel for the project specification came when I attended a talk by the President of a software development company, in which the speaker mentioned the use of a Wiki as a means for geographically remote programmers to provide updates and status reports on their current endeavors. I had heard of the term at that time, but thought that Wiki was a reference to the Wikipedia, and not a web-based tool for collaboration. Where better to turn for some fundamental information about Wikis than the Wikipedia, itself? I found [http://en.wikipedia.org/wiki/WIKI](http://en.wikipedia.org/wiki/WIKI) -- the actual reference article about Wikis from the Wikipedia. From this source, I read that Wikis are “…a simple, easy-to-use user-maintained database for searching or even creating information… edits are made in real-time, and appear almost instantaneously online.”, and I immediately saw the potential for using this technology as the format for the students’ project specification.

The next step in this process was to find a Wiki host. The requirements were simple:

1) Free
2) Easy
3) No spam
4) Fundamental privacy protection
5) Generous space quotas
6) At least 15 user accounts with administrator-provided “permissions”
7) RSS feeds a bonus

A Google search or two later, and I came across the Wiki page titled: *Wiki Hosting Comparison Guide* at [http://www.editthis.info/wiki/Wiki_hosting_comparison_guide](http://www.editthis.info/wiki/Wiki_hosting_comparison_guide), and after reviewing the content found, coincidentally, that the host editthis.info, offered a Wiki that met the basic requirements listed above. Another excellent source that I came across during this process is [http://www.wikimatrix.org](http://www.wikimatrix.org), a comprehensive clearinghouse of information on Wiki hosts that allows direct comparisons and a convenient “Choice Wizard” that uses a Q & A format to help narrow your hosting choices down. In the end, I selected [http://www.editthis.info](http://www.editthis.info) as the host for my Wiki experiment – a process that requires clicking a button to “create a new Wiki”.

### Setting Up the Wiki

After selecting the host, I went through the set up process of naming the Wiki, creating an admin account for myself, and user accounts for the nine students in the class and the client. Wikis are public entities in that their content is rarely password protected. There are a few private Wikis, but I elected not to pursue these as options because I wanted the students to have immediate access to the content without having to log in. By making it publicly readable, I am able to bookmark the Wiki on all the computers used for the development of the project, and in some cases, I have made it the default page in the Web browser. However, all content creation and editing was reserved for the students and myself. The “Control Panel” link that is available throughout all pages at this site allows for the establishment of private/public privileges and parameters for content creation and editing by users who are logged in. Overall, the experience was simple, and did not require prolonged study.

What took slightly more time and study was the process of authoring Wiki content. In comparison to writing HTML code, something I personally have done for over a decade, it is incredibly easy, however, there is a certain syntax that must be followed in order to achieve acceptable results, and this syntax – mainly the substitution of symbols for certain functions –
requires some getting used to. Content is added directly to the page via standard Web form elements such as text areas, and can be previewed in context before being saved to the page. Composition is simplified in the EditThis Wiki by a row of shortcut buttons that will insert certain elements in the page such as hyperlinks and media. It is my experience that all Wikis feature some set of shortcuts and toolbars such as this, making the knowledge transferable from one host/application to the next.

To get the project specification Wiki off the ground, I established a main page that serves as the table of contents for the rest of the spec. In doing so, I quickly learned how to add/delete pages to the Wiki and link to them, upload images and post them to pages, and add standard HTML elements like bulleted lists, tables, and headings. For specific formats such as nested lists, knowledge of HTML mark up is valuable since the Wiki allows standard HTML to be added without issue. During this process, I was pleasantly surprised to find that the Wiki had some built in capabilities that would prove useful to the creation and use of the spec. Chief among these capabilities are:

1) The ability to track changes to content, and even see version histories of pages,  
2) the ability to time/date stamp content and show attribution; and  
3) the auto-generation of a linked intra-page table of contents for long pages that include subheadings for sections of content.

The Wiki is Unleashed

After doing the initial set up of the Wiki, I used about 30 minutes of class time to introduce students to the Wiki. Many students had never heard the term, nor knew of the Wikipedia, which surprised me since they were all juniors and seniors in an upper-division media arts class. After the 30-minute introduction, students seemed content with the format of the Wiki, and many were visibly excited at the prospect of using something that seemed so modern and, as one student put it, “altruistic”. The first assignment for the class was to add their name and contact information, complete with an e-mail link, to the Contact Information page – a standard component of any project specification. Once this was complete, I was happy to find the vast majority of the students actively involved in creating their assigned content for the Wiki. Requests for assistance were well below what I expected coming into the experiment, and in
numerous instances I found the students’ mastery of the Wiki to exceed my own, something that I am used to when it comes to new technologies.

The Wiki took on a new and unexpected life during one of the many class brainstorming sessions. During the design phase, students craft numerous sketches and storyboards that illustrate the creative direction they want to take with the project. A digital whiteboard is used during this process and all drawings are captured to the instructor’s laptop computer. At some point in this process, we decided to upload all captures from the whiteboard to the Wiki. A second area called “Notes” was added to the Wiki, where all “raw” content that was used in the creation of the spec was also made available. Knowledge capture has always been a challenge in a creative environment where students work both independently and in teams to produce the myriad aspects of the project’s user interface and key functions. In the many instances where the work product was already digital, it was converted to a Web-compatible format and uploaded to the “Notes” section of the Wiki. In the few cases, where output was hand-drawn, scanners were used to capture the work for posting to the site.

The specification was built and made available to the client on the deadline established at the start of the term. Prior to releasing the spec to the client, I was able to review it, and make changes and comments that I felt were necessary. These comments were date stamped and attributed to me, and they served as assessment opportunities where I could point out content that was especially well-done and conversely that which fell short of the expectations for the this particular course. This opened the process to the client, an educator and a colleague, who was impressed to see the amount of time and thought that went into the spec’s creation, but also the transparency of the educational process at hand. In projects that involve clients who are external to the university, the addition of instructor’s feedback in such a public forum would likely be reconsidered, perhaps relegating such comments to a separate section of the Wiki designed for just that purpose. Another option would be to use the threaded discussion area that automatically accompanies each page in the Wiki. This feature was not used in this first implementation, but it does present an interesting opportunity to provide students and faculty with the ability to discuss and review content in a separate but linked area of the Wiki.

The client reported that the review of the project specification via the Wiki was a simple and enjoyable experience. Though the opportunity for “live” feedback from the client was
available via the Wiki, the client elected to submit his feedback via e-mail. As another example of the advantages of the Wiki format, the client’s comments were then posted to the Wiki as an appendix to the specification.

At this point in time, I am hard-pressed to find a significant disadvantage to using a Wiki for this type of work. I think it is an excellent tool for small group projects that require long-term commitment from students and on-going review and feedback from stakeholders. In assessing the experience for potential disadvantages, I find the following potential pitfalls: First, as with any technology, there is the risk of alienating students who are not as comfortable with technology, and who, for one reason or another, do not seek assistance. Second, there is a certain tangible quality to the printed specifications that give them increased validity. I’ve had prior clients comment on how professionally designed the document itself was, and this aspect is lost in the somewhat bland environment of the Wiki, especially one that features the omnipresent “Ads by Google” banner which appears to be the popular funding model for these free services. Finally, there’s the small learning curve required by all who contribute to the Wiki. As mentioned before, this is by no means a major barrier to the use of the Wiki, just a minor hurdle that must be overcome by the students. From my own perspective, as much as I like the efficiency and instant gratification of the Wiki, I, as a reader, felt that the finished spec lacked a certain scannability that is experienced with printed texts. Thumbing through a document, and catching glimpses of headlines, and supporting imagery is an excellent way to appreciate something like a project specification, that can be very detail-oriented in places, and I find that I just don’t spend as much time reading over the Wiki based spec as I have with printed ones from previous classes.

Despite these admittedly minor disadvantages, I am quite happy with the outcome of this experiment, and I feel that the process by which the students came to learn about project management was enhanced by it. Anecdotal evidence at the conclusion of the fall term supports this notion, as more than one student pointed out the value of using the Wiki in the class, and thought that it would complement other courses they had experienced. As of this writing, the project specification is complete and ready to move into the next phase. The remaining test for the Wiki is to see if it plays a more prominent role in the development of the project, which is set
to begin in the spring of 2007. The project spec is publicly available at

http://www.editthis.info/meda360_spec/.