Wiki epitomize, for me, the Social Constructivist idea that knowledge derives from social interactions. My personal beliefs about teaching and learning take a Social Constructivist slant that is most in line with Duffy & Cunningham’s (1996, p.181-182) version of constructivism: “learning is a social, dialogical process of construction by distributed, multidimensional selves using tools and signs within context created by the various communities with which they interact.” Proponents of this view emphasize the social construction of knowledge, both present and past, and the important role of cultural tools and practices that mediate social encounters and support that construction. Social software tools, such as wiki, serve to both augment cognitive process that help overcome the natural and social limitations of communication and collaboration, and eventually loop back to shape the thoughts and practices of its users like any other cultural tool.

The social constructivist concept of mediation summarizes the pedagogical value of wikis. First, wikis, like other social software tools, are generally thought to mediate social interaction and collaboration; that is, they provide a shared medium for communication/collaboration, not unlike a language. Social interaction can take many forms—verbal communication, digital
communication synchronously or asynchronously, etc. but it always involves a shared medium or channel to take place in. A wiki is the shared interactional space that fosters collaborative knowledge construction—that is its purpose. This e-space mediates for online interaction through its composition as what Perkins (1991) called a “rich learning environment”—with tools for offloading memory demands, managing tasks, accessing information, and modular building structures.

Secondly, wikis provide an exceptional way to foster student collaboration and consensus building—two critical higher order learning skills—and therefore lend themselves to group projects, online or in-class. Wikis come native, out-of-the-box so to speak, with “multiple operating instructional strategies” built-in, such as, collaborative learning, distributed learning, self-directed learning, knowledge building, and goal-based and problem-based learning that resemble Jonassen’s (1999) notion of a Constructivist Learning Environment (CLE). One of the most recognized affordances of wikis is an inherent capacity for enabling group collaboration. Since the default setting permits anyone to contribute/edit content, group collaborative interaction is easily fostered and very few protocols are required to maintain a democratic spirit of knowledge construction. Wiki facilitates collaborative writing assignments similar to the way discussion board tools facilitate collaborative discursive assignments: both tools augment the ability for reflection, articulation, analysis, synthesis of ideas online.

In the following, I will sketch my experiences using wiki to foster student collaboration in an online course.

**Background**

EDIT 574 is a hands-on “tools” class offered online over 8 summer weeks through the Graduate School of Education at George Mason University (GMU). It introduces students from a variety of education programs to basic networking and telecommunications technologies. I was asked to redesign the course several years ago for online delivery and to include more emphasis on emerging web-based tools and technologies, such as, Internet P2P, wireless/mobile learning, social software/web services and others. I informally title the course: Educational Uses of Computer Networks. The following is the breakdown for the course syllabus: 40% online discussion work, 40% individual exercises, and the remaining 20% of
their grade would come from a group research project that required the use of a wiki. I have taught the course twice before and have used weblogs and taught about wiki, but never used the latter.

As a relatively new adjunct instructor, deviating from the traditional syllabus and planning new exercises is still a bit scary for me; I don’t know where the problem areas are or if the whole activity might “blow up” on me, and result in poor student learning experiences. But I made a decision to use a wiki for this course early on—partly because a major part of the content of the course was about the affordances of social software for e-learning, and partly because I believed that a wiki was a good way to foster collaborative student learning. Moreover, since it was an 8 week summer class, the class was small with only five students enrolled, each of whom was employed full-time in instructional or informational technology-oriented jobs, and therefore, more than capable of using new web-based communication and collaboration tools. Overall, I think my constructivist teaching approach makes me a good course facilitator; I am comfortable providing students with a general outline of the course topics while structuring and supporting the learning process through specific activities, exercises, and then letting them essentially generate the contents as I respond to their work and augment their construction of meaning. The tricky part is to be able to effectively assess these kinds of learning activities.

**Wiki Group Project Assignment**

For this assignment, the five students were asked to work together in two small groups and to use a wiki to collectively decide on a research project topic, create a team management plan, and to assemble the research work, writings, links and other digital assets into the final product. The final project size was to be equivalent to 3-4 typed text pages (without images). The wiki would contain their group decision-making results as well as the final research deliverables and would be evaluated on both products (5% and 15% respectively).

The general topical area of the assignment was social software tools/emerging network technology, and the students were given a choice to evaluate a single tool or technology, in depth, or at a broader category level, e.g., social software as a whole, or RSS. My goal was to have them describe their topic, analyze its uses for e-learning, and evaluate its effectiveness in accomplishing its designed goal. Their deliverable was to include the following sections: a
definition, classification, technical specifications, instructional affordances, and educational uses/examples and best practices.

In addition to choosing a topic, I encouraged the groups to choose a project organizing structure as I had read somewhere that collaborative work in wikis is made easier when students have some kind of familiar structure to “scaffold” their work. The following are some examples I provided:

- website, book, tutorial
- knowledge base
- conference/symposium website
- case study
- teaching with technology guide

**Wiki Group Project—Scaffolding**

As mentioned in the introduction, wiki serves a mediational role for group learning and may have various forms of learning support built-in, or affordances for student collaborative work, such as its public availability, democratic accessibility, group authoring/editing options, and group communication. Still, for more structured learning goals it is often necessary for the teacher to augment wikis’ inherent learning potentials with various learning scaffolds. I mentioned how structuring wiki content into a familiar form aids the group management of the work to be done. I next list three techniques that I used to scaffold the wiki group assignment.

**Wiki Practice Exercises**

One of the first scaffolds I used for the assignment was to create a practice wiki and to create a series of practice exercises that required them to work as a large group to organize material on a topic using the wiki tools. For my first time, I was hoping that this would give me a sense for what I might expect in terms of group dynamics and how the tool worked for a group of 5 students. After contacting me for help, I advised one student to lay out a basic web page structure for the process the students needed to describe. With this in place, I encouraged the other students to jump in and take it in any direction that made sense to them,
to add details, definitions, draw relationships, add links to sites/images etc. I instructed them to describe key terms and concepts in their own words, however imprecise they may sound, and asked them not to just copy and paste descriptions from the web. The following week, I had them practice editing one another’s work by requiring them to make at least 4 new entries and 4 edits to their fellow student’s entries.

NOTE: From the practice exercise experience, it became clear to me that the wiki tool I was using as part of basic suite of conferencing and collaboration tools in a system GMU supported was not as usable as many of the free, hosted consumer oriented ones that are popular on the web. Although it was part of the course site and provided a continuity that I thought was important at the time, I now realize that it is better to use easy-to-use tools even if it takes the student temporarily outside the course learning environment as opposed to using tools that are difficult or frustrating to use. For the group projects, the students were allowed to choose a wiki tool of their own or from among a few that I recommended.

Wiki Contract/Charter

The next scaffold I used was to prop up student teamwork management by using set of prepared team charter questions developed by Wicks et al (2006) (see also Wick’s chapter in this book: Navigating the Wiki Maze). I required each of the groups to copy these questions into a wiki page and complete them as a group before I gave them the topic. The charter includes a project management timetable for the wiki. This technique empowers students to self-regulate group behavior by determining rules for managing key project tasks and appropriate responses for holding group members accountable for their roles.

Wiki Examples and Rubrics

Another traditional scaffold for student assignments is to provide examples of what you expect either by using previous student work or made up samples. Since this was a new assignment, I didn’t have any prior student samples and so used close enough examples such as Wikipedia pages to provide a sense of final product. The organizing structure scaffold mentioned earlier is a related type of support.

I wanted to create a rubric to help them understand what the critical elements of the
assignment were, but did not get it done in time to guide their work; instead, I refined the categories I was working on into a final project peer-review form. Peer review activity is a useful way to get each student to take the time to critically evaluate their peers’ work. This also provides a more reflective way for students to understand the nature of wikis.

**Student Outcomes**

Although a couple of these students had been recently introduced to wiki in work contexts, for everyone, this was their first time setting a wiki up for their own purpose from scratch. As I think back, they were all unsure about how to get started designing, collaborating, creating, and ultimately, envisioning their final product, and therefore, needed a fair amount of support and guidance throughout the process. With the help of the various scaffolds provided, all students made progress adding content and using wiki camel case text formatting to format the basic structure.

**Wiki Group Project**

At about the mid-point of the 8 week class, I prompted the five students to form themselves into two small groups and to choose a wiki tool from a short list of commercially-hosted wikis that were recommended to me. The following is an example of one of the group project websites: Group 1: http://www.podcasting-gmu.wetpaint.com.

Finally, each group was required to show their wiki to the class in a formal presentation. I had planned to use Breeze Meeting as the real-time environment for this, but due to schedule conflicts I decided to have students comment on one another’s project via discussion during the final week of class.

**Assessment**

My assessment of each of the projects was done by looking over the wiki and assessing it according to the rubric I devised, but never distributed. I used the peer review forms completed by each student on the other groups project to cross check my evaluation. The rubric/peer review forms overlapped the following categories:

**Content**—the degree to which the project’s purpose and subject knowledge is demonstrated. Includes depth of coverage, details, and examples.
Organization & Readability—how well the content is organized using headings or bulleted lists to group related material. I included spelling and grammar here.

References—were references cited and did they link to resources and annotate references with a brief sentence.

Page Linking—were there links back to key terms described on other wiki pages and to other relevant pages. Includes presence of a page navigation scheme.

Evidence of Student Collaboration—per the rubric and my instructions, did each student in the group make edits on at least five of their peers’ entries. Collaborative editing should show some evidence that students collaboratively constructed the meanings of their topic. How many edits to one another’s work were made?

Group Charter/Milestones—did the group develop a plan for managing the work to be done. This was assessed using a combination of resources including email communication with me. Counted for 5% of their grade on this part.

References

