Online Collaboration Tools in Instructional Design

James A. West
Assistant Professor
Department of Instructional Design and Technology, Western Illinois University

Sharon A. Sample
Library Specialist
Malpass Library, Western Illinois University

Margaret L. West
Instructional Technology Systems Manager
Center for Innovation in Teaching and Research, Western Illinois University

Introduction

The Internet offers many tools and technologies designed to help learners communicate and collaborate with each other. Online collaboration is an essential aspect of online learning, and new methods of using online collaboration can be beneficial to both teachers and learners. Recent tools such as blogs and Wikis have expanded the instructional designer’s palette for designing effective online instruction.

Collaborative Learning Online

Kearsley (2000) reports that students in online courses often perform as well or better than those in conventional classes. Online students indicated that they had more contact with their instructor and their participation was increased. Students reported higher course satisfaction and more interest in the subject matter. Online classes have the potential to change student and faculty interaction. The social context of the class, including the amount of control exhibited by students and faculty, can be affected.

Online collaboration comes with its own set of challenges, such as grading individuals on group work, dealing with students who choose to not participate, and handling conflicts within the groups. Thompson and Ku (2006) describe what can go wrong in online collaborative learning environments in their study of twelve graduate students enrolled in an instructional design course. The research was conducted to determine the comfort and effectiveness of online collaboration from the students’ perspective. The class was divided into four groups, prior to meeting. Even though these were graduate students, they experienced typical dysfunctional group dynamics: one or two people pulling the weight for the entire project and a lack of communication and participation depending upon the perspective.

One advantage of collaborative group projects is that learners are able to work on issues that are more like the real world, sometimes handling and reflecting on very complex situations. Learners must be actively engaged in meaningful tasks for effective learning to take place (Kearsley, 2000). Learners need to be involved in designing, planning, problem solving, evaluating, or making decisions.
In a recent study, students in a high school science methods course were randomly assigned to one of three groups: private journal, asynchronous discussion, or an Internet-based discussion forum of teachers for each individual to reflect upon their student teaching experiences (Makinster, et. al., 2006). The intent of this study was to determine the impact of the online communication method on reflections as well as how the participants perceived the overall experience. Results confirmed that while the private journal group started out strong with their reflective writing styles, it was the two online groups that prevailed. Feedback from the forum participants reinforced that collaboration was the key to their success and that they valued the overall experience. The private journal group wished they could have interacted with their peers and did not have a sense of gain.

**Background on Wikis**

A Wiki is a tool that allows multiple participants to collaborate using Internet software (Chawner & Lewis, 2006). The technology was born in the mid 1990’s but only recently has been put to wide scale use for educational purposes. Access to Wikis had been limited due to lack of consistent computer languages between Wiki engines and amount of memory needed to download specific Wiki software. However, free and accessible Wiki sites have begun to populate the Internet, including JotSpot and PBWiki. These Wiki providers offer end users access to create and share their Wikis without having to install their own Wiki software. Wiki sites are becoming more and more user friendly by providing the interface that lets users create and modify their Wiki pages without learning any special markup tags or HTML. The downside is that these free services often come with limits including the number of pages that can be created, or the ability to provide multi-level password access (e.g. administrator, participant, viewer).

**Using Wikis in Instruction**

Wikis were used as a collaboration tool to assist students in IDT 440, an advanced course on designing and developing computer-based instruction in Western Illinois University’s Department of Instructional Design and Technology. The course is required for all majors in the program and is often the capstone class for students in the department. Wikis were used both as an instructional strategy and as a way to manage group and individual progress.

The course relied on the free Wiki service called PBWiki (www.pbWiki.com). This service allows an administrator to create an unlimited number of Wikis that can be used and shared by class members. The advantages of the service included the cost (the service is free for the basic package) and the ease of use (it works much like a word processor). The disadvantages included the presence of ads on the Wiki pages and limited password control.

Traditionally, IDT 440 divides the class into small groups early in the semester. Groups are charged with following the instructional design process, from the front-end analysis stage through to the design and development of a multimedia instructional product. The challenge to both the groups and the instructor is that the project builds throughout the entire semester. If one part of the instructional design process falls behind, or does not meet expectations, it impacts each of the remaining assignments. In addition, students remain in their group the entire
semester. The instructor must be able to help them work through conflicts, especially when someone feels he or she is doing all the work, while another is not participating.

To promote and track group collaboration in IDT 440, each group was required to create, edit, and revise the group’s design documents “live” using online Wikis. These online Wikis were used for all aspects of document sharing and group reporting. Group projects were divided into five major milestones:

1. Project Proposal
2. Task Analysis, Learning Objectives, and Assessment
3. Instructional Strategies
4. Storyboards
5. Final Project

Each milestone had its own set of deliverables. The first three milestones resulted in documents that each group developed “live” on the Internet using a Wiki. Through the Wiki, each group had the ability to build their design documents, edit each other’s work, and submit the documents to the instructor for feedback. Each group’s Wiki included its own discussion board, allowing students to communicate their expectations to each other, comment on versions posted, and share files. The Wikis also tracked changes between versions of the documents, and saved previous versions. Both the instructor and the students could identify what each member of the group contributed to the documents, and also see when they made their contribution.

Groups were evaluated on the quality of their instructional design documents. These were presented as “Group Projects” and all participants were told that they would receive the same grade regardless of who or how much they contributed to the project. The emphasis for these projects was on the actual design outcomes.

Individuals were evaluated on their contributions to the project in three ways. First, the Wiki tracked who created the original document, and who made any subsequent additions or revisions to the document. Each version of the document was saved and could easily be compared to earlier or later versions. Second, PBWiki tracked the pages that each learner visited. This made it possible to see how often group members logged in and accessed their group’s pages. Third, through a set of “Wiki Post” assignments, each person posted comments to the Group Project pages on a regular basis. These comments generally consisted of: a.) what the individual’s contribution was and b.) confirmation (individual “sign off”) that they have read and approved their group’s work. Fourth, each Group Project was followed by a Quiz that checked their understanding of the assignment and their project deliverable. Therefore, the emphasis for the individual grade was on collaboration and process.

Results

Using Wikis for group collaboration in IDT 440 allowed learners to work at their own pace and determine the nature of how they wanted to collaborate. Since the Wiki posts were public to everyone in the group and to the instructor, groups very quickly learned how to work together in order to submit their projects. The different groups had various levels of success in meeting the course objectives. The public nature of the Wikis meant that it was very clear early in the
semester where conflict would arise and allowed the groups opportunities to work them out before the course reached a critical stage.

Since each person received the same grade on their Group Project assignments, there was a tendency for some group members to let others put in a majority of the work. However, this was balanced by the Wiki Post assignments and the Quizzes. The Group Project sign-offs also prevented some from blaming others for any delinquencies in their projects. Finally, the administrative functions of PBWiki gave the instructor an additional tool for measuring individual contributions.

From the learners’ standpoint, the Wikis were a valuable way to collaborate. Students liked the fact that they could work together, without necessarily being in the same room. In addition to seeing their projects being created “live,” the Wikis also provided them new tools to communicate with each other as well as share files. Ultimately, the Wiki provided a way for students to collaborate online in a real world situation.

References


Biographical Sketch

James West is an Assistant Professor in the Department of Instructional Design and Technology at Western Illinois University. He has taught online courses at WIU as well as at Northern Illinois University. He has designed and developed elearning courses for companies such as Sears, Unext, and Career Education. In addition, he has 15 years experience as an information researcher and has taught classes at NIU and Dominican University in online searching and reference. He has presented at ISPI, AECT, ASTD, the International Distance Learning Conference, and the International Essen Symposium.

Address: Department of Instructional Design and Technology
Western Illinois University, Macomb, Illinois 61455
Email: JA-west2@wiu.edu
Phone: 309-298-2963

Sharon A. Sample is a library specialist at Western Illinois University. Her research focuses on information literacy and emergent technologies. She has presented on Blogs and Wikis at the Alliance Library System and at the Western Illinois University's Tech Fest.

Address: Leslie Malpass Library
Western Illinois University, Macomb, Illinois 61455
Margaret West is currently the Instructional Technology Systems Manager in the Center for Innovation in Teaching and Research at Western Illinois University. She is responsible for the development and training of faculty, especially in the area of Distance Learning. She has over fifteen years experience as an instructional designer, consultant, and university educator in northern Illinois. She is recognized as a leader in web-based training and distributed learning. She has presented at national and international conferences of professional associations including ASTD, ISPI, AECT, the Academy of HRD, and the Annual Distance Learning Conference in Madison.

Address: Center for Innovation in Teaching and Research  
Western Illinois University, Macomb, Illinois 61455
Email: ML-west@wiu.edu  
Phone: 309-298-2438