Pre-service Teachers' Experiences with Wiki: Challenges of Asynchronous Collaboration

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1. ABSTRACT

The purpose of this paper is to share the wiki use experiences of pre-service teachers enrolled in an undergraduate class taught by me. Students used a Google wiki site (http://sites.google.com) to work on one of their assignments. An evaluation of their experience suggested that these students needed a tool that better supports real-time communication, and that voluntary participation in the wiki might create a better learning environment.

Categories and Subject Descriptors

H.5.3 [**Group and Organization Interfaces**]: Asynchronous interaction, Computer supported cooperative work, Web-based interaction
K.3.1 [**Computer Uses in Education**]: Collaborative learning.

General Terms

Human Factors, Management

Keywords

Google Wiki, higher education, pre-service teachers

2. INTRODUCTION

Classified as social software [1], wikis expand collaboration opportunities beyond the classroom. They provide a workspace that is accessible and editable without the constraints of time and place underlying a view of social construction of knowledge. Although their educational potential is largely recognized, use of wikis in higher education can still be considered relatively new [2]. In this paper I report the experience of junior year pre-service teachers who collaborated on a class assignment using a wiki. The participants in this study were middle school math pre-service teachers who were enrolled in the 'teaching geometry' course. One assignment for this course was to work in groups over the semester to prepare two lesson plans that could be used

in middle school geometry classrooms. A Google site was created for them to collaborate on this assignment. Following the idea that less scaffolding would result in better end product [3], I minimally intervened into the group work. Each group was provided a blank page for each lesson plan assignment. They received feedback only when they submitted their lesson plans to a designated page for final works.

I initially expected that wiki use could augment the time students would work as a group without the problem of scheduling face to face meetings. I also thought that I would be able to monitor the processes of group work and the individual contributions of each group member. Toward that end, I told the students that I expected them to record all communications and contributions on the wiki, even if they also met in person. I explained that this way an equal division of labor among members would be more likely.

Toward the end of the semester, the students completed a survey evaluating their experiences with the Google wiki site. Thirty-four students participated in the survey. Two major themes were apparent in the answers to the survey questions: Although the students found the wiki helpful in their group projects, some students wanted to communicate with their group members synchronously, which the wiki did not support. Also, mandating that the wiki reflect each and every contribution made by group members may have limited the benefits of the wiki. Below I discuss their answers to the survey questions in more detail.

3. FINDINGS

3.1 What do you think about preparing your lesson plans as a group? Would you prefer to do this assignment alone?

Of the thirty-four students, twenty-two students seemed to prefer group work over working alone on this project (65%). Eight students preferred to work alone (24%). Four students did not state an explicit preference. Students provided several rationales for preferring group work over working alone, such as: less work, the group compensates for the mistakes of individuals, the value of different perspectives, and group accountability.

3.2 Are you satisfied with the process of your group work? Are you satisfied with the end result of this group work, your lesson plan?

Most students felt that their group work was successful (%71) although some of these students were more satisfied with their second lesson plan. There were, however, some students who stated that they were satisfied with their group work even though

they said earlier that they would prefer working alone on a project like this (3 students). On the other hand, another group of students were not satisfied with their group work even though they stated that they favored group work over working alone (3 students). It appeared that the main problem for these students stemmed from working with an asynchronous tool.

3.3 Does using the wiki make your group work easier or more difficult?

About 41% of the students stated that using the wiki made their group work easier (n=14). The wiki facilitated sharing of ideas regardless of time and place. Students said that they were able to meet on the wiki whenever they wanted, and could keep track of each other's contributions even late at night. It enabled them to share resources by using the wiki as an external memory space and made communication easier. One student commented that it made him to play a more active role in group work, since all communication and contributions were also visible to the course instructor. It was also possible and very easy to access other groups' work.

About 34% of the students thought that using the wiki made it more difficult to work as a group (n=11). It seemed that most difficulties stemmed from limited technical access and the need for synchronous interactions, which the wiki did not support. Some students did not have Internet access at their homes, and they stated that this limited their participation, even though they had access to the Internet at school. Although it was clear that some of the failure to use the wiki most productively was caused by poor group organization, students nevertheless felt the need for real time communication.

The rest of the students either said that the wiki did not affect their group work in any significant way, or they thought the wiki made the group work both easy and difficult at the same time. Some of these students pointed out a problem which was not inherently a feature of the wiki, but an assignment expectation (record every contribution on the wiki). These students perceived the class expectation as the technical aspect of the wiki and complained about the competition this created, which was, for some, "against the spirit of the group."

3.4 Is there any technical aspect of the wiki that makes things easier for you?

Students appreciated the most basic technical aspects of the wiki environment: that it was accessible, dynamic, and public. In addition, Google sites enable users to register for page changes, that is, whenever a change is made to the page, users who have checked this feature are notified via email. Students said that they were able to keep an eye on both their groups' and other groups' participation in this way. The similarity in format between Google sites and MS Word, with which students were familiar, meant that students found the Google sites easy to use. In addition, some students found the 'comments' feature very helpful.

3.5 Is there any technical aspect of the wiki that makes things more difficult?

Although it is not a technical aspect of wiki, accessing the Internet was an issue for a number of students. Apparently these students did not consider school computer labs comfortable environments for working on this project. However, the most basic shortcoming of the wiki environment for these students was that it did not support synchronous communication.

While some students were happy to see the similarity between the MS Word formatting panel and the wiki formatting panel, others were more aware of the differences between them. When students wanted to add pictures or graphics they could not simply cut and paste them as they could with MS Word. Google sites require them to use the 'insert' feature. This meant that they first had to save the file they wanted to insert; they could not simply cut and paste it from the Internet.

In addition, students wanted to draw geometric figures. Some students also wanted to embed sound files and dynamic files within the wiki site, such as the Geometers Sketchpad files and animated GIF files. One student also pointed out that while working with the wiki one can easily delete others' work. Also one cannot directly see who edited the website last time -- users have to look at 'previous versions' to keep track of contributors, yet it is still difficult to determine who contributed what very easily. Also, students complained that only one person could edit the site at a time. This also demonstrated a need for synchronous communication. Additionally, some students lost data when they could not save their contribution, which was probably caused by low bandwidth. Some students also thought that the main source of difficulty might be more related to their computer literacy level. Some had a hard time with page layout, such as moving pictures or aligning text with pictures.

4. CONCLUSIONS

Two major lessons can be learned from these pre-service teachers' experiences with wiki use. Although students seemed to appreciate the wiki for affording file and resource sharing, they found it very intimidating to record their contributions after meeting face to face. This was of course a class requirement rather than being an inherent feature of the wiki. A number of students also felt a grading pressure, which they considered as a factor that made it more difficult to work as a group.

This suggests that the class requirement that only wiki-based contributions would count towards points was not very successful, at least for some students. Also, students need to be supported with an instant messaging environment along with wiki use in order to meet their need for synchronous communication.

5. REFERENCES

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