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Using Wikis to Support Peer Assessment Activities in Higher Education

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Abstract: This study explored the effectiveness of using wikis as an environment to support peer-assessment in higher education settings. The participants of this study were nineteen per-serviced teachers who enrolled in an undergraduate course on the application of instructional technologies in classroom. In the study, the participants created their personal wiki pages within a course wiki and formed groups of three or four. Five peer-assessment activities were assigned, in which the participants uploaded their class projects to their wiki pages and went to their group member's pages to provide feedback. The participants were expected to evaluate other's projects in terms of educational values, visual effects and the format. A short survey was conducted after each activity asking participants' perceived learning and a post-survey was conducted at the end of the study to ask their general experience of peer-assessment activities in the wiki environment. The survey results and the analysis of participants' wiki posts indicated that the wiki was an interactive environment that facilitated the peer-assessment effectively. With proper guidance, the participants were able to provide critical peer feedback within the wiki environment.

Introduction

Wikis are editable webpages that allow the collaboration of multiple users (Ferriter, 2009). Users can create associated hypertext without the installation of extra software using wikis and its functions require low level of technology proficiency to use (Karasavvidis , 2010). In recent years, there is an increasing use of wikis in classrooms because its ability to provide collaborative online learning environments by encouraging open discussions and exchanges of ideas (Heafner & Friedman, 2008; Su & Beaumont, 2010; Xiao & Lucking, 2008). Many studies have been conducted in different content areas to explore the use of wikis in promoting teaching and learning in different ways (Bender JL et al., 2011; Heafner & Friedman, 2008; Karasavvidis , 2010; Otter, Whittaker, & Spriggs, 2009; Su & Beaumont, 2010). In these studies, some of them focus on exploring the use of wikis as an environment to support peer assessment activities (Bender et al., 2011; Su & Beaumont, 2010; Xiao & Lucking, 2008). Xiao & Lucking,

(2008) reports that "Using Wiki interactive software and providing an online collaborative learning environment to facilitate peer-assessment added value to peer assessment."(p.186).

The purpose of this study is to explore the effectiveness of using wikis to support peer assessment activities in a higher education classroom. It examines students' perceived attitudes towards their experience of accomplishing peer-assessment activities in a wiki environment as well as the effectiveness of the peer-assessment and its impacts on students' learning.

Peer-Assessment in Wikis

Wikis has been used as an environment to hold peer assessment activities because of its interactive nature of supporting collaboration among multiple users. In Bender and his colleagues (2011)'s study, a public Open Medicine wiki was established for anyone to edit in order to support the collaborative authoring and systematic review. The results showed that although the public wiki provided "an easy-to-use, free and powerful means to edit information" (p. 201) and attracted many visitors, only less than 1% of them had made their contributions to the pages. The authors augured that possible reasons might be that the visitors were unfamiliar with the wiki, lack of interests for the topic or lack of intensive for participating.

Peer-assessment activities are more efficient in formal structured classrooms. By examining the use of a wiki to support peer-review activities of 12 graduate students in their proposal writing throughout a semester, Su & Beaumont (2010)reported that students had abilities to post comments that had indications of criticality. Also, most students perceived comments from other students as beneficial. The authors argued that wiki helped students to develop abilities as critical learners in terms of giving and receiving critical feedback.

Different types of peer-assessment might also have different levels of effectiveness in wiki environments. Xiao & Lucking (2008) used a quasi-experimental design to explore the impacts of two types of peer assessment on students' performance and satisfaction within a wiki environment. In the peer-assessment activities on students' writing in a wiki environment, while the control group used a rate-only method in peer-assessment, the experimental group was required to provide comments alone with the ratings. The results indicated that students in the experimental group demonstrated greater improvement in their writing than those in the control group. The students in the experimental group reported higher levels of satisfaction with the peer assessment method both in peer assessment structure and peer feedback than those in the control group.

Using Wikis to Support Peer Assessment Activities in Higher Education

Although there are exiting literatures on using wiki environments to support peer-assessment, a deeper understanding is still needed on its effectiveness and the factors that may affect its effectiveness in different content areas. The purpose of this study is to explore whether the wiki environment can effectively facilitate the peer-assessment activities among pre-serviced teachers in a higher education setting.

Wikispaces(http://www.wikispaces.com/), a free webpage supports creation of wiki pages, is used in this study. Using Wikispaces, users can share editable webpages with text, pictures, links and media. In the study, the following questions are addressed:

(1) What are students' perceptions on using wikis as a collaborative environment to support peer-assessment?

(2) Whether students are able to provide critical peer feedback to their peers with guidance?

(3) What are students' perceptions on the effectiveness of peer-assessment in promoting their learning within the wiki environment?

Method and Participants

A case study method was used in this study. Nineteen per-serviced teachers who enrolled in an undergraduate course on the applications of educational technologies in classroom participated in the study. Among the participants, eight of them identified themselves as beginner or advanced beginner of technology users and eleven identified themselves as intermediate or expert users.

Procedures

Before the study, the participants created their personal wiki pages within a course wiki. In their personal wiki pages, the participants were asked to personalize it by adding their profiles and uploading their pictures. During the study, five peer-assessment activities were assigned to the participants as a course requirement. In the activities, the participants formed groups of three or four and provided their feedback to their group members. In each peer-assessment activity, the participants uploaded their course projects to their personal wiki pages while visited their group members' wiki pages to examine their course projects and provide feedback by adding text comments to their group members' pages.

For the course projects, the participants were expected to create materials that they could use in their future classrooms with the educational technologies they've learned in class. In the peer review activities, the participants were expected to comment on their group members' projects in three different aspects: educational values, visual effects and the format. Guidelines were provided to facilitate the activities. In the first two activities, detailed guidelines in evaluate the three aspects were provided. In the third activity, general guidelines were provided. In the last two actives, the participants were expected to provide feedback focusing on the three aspects without any guideline.

Measurement

Surveys. A short survey was conducted after every peer-assessment activity to ask participants' perceptions on the effectiveness of the peer feedback they've got in this particular activity as well as the interactions within the groups. At the end of the study, a post-survey was conducted to explore participants' general experience of peer-assessment activities in the wiki environment in terms of the wiki's functions in supporting interactions and the effectiveness of the peer feedback in promoting learning.

Feedback analysis. The feedback that posted by the participants on their group members' pages will be analyzed to determine whether they are able to provide critical feedback. The feedback will be analyzed in two aspects: (1) whether the feedback has covered the required three aspects: educational values, visual effects and the format; (2) whether the feedback has provided specific examples to support the arguments.

Initial Results

This paper is a work in progress, so results reported here are only based on parts of the post-survey responses. In the post-survey, the participants were asked to rate their experience of peer-assessment activities in the wiki environment using five-point likert scale. For each Likert item, -2 = strongly disagree, -1 = disagree, 0 = neither agree nor disagree, 1 = agree, 2 = strongly agree. Table 1 presents participants' perceptions on the wiki's functions in supporting peer-assessment activities. In general, most participants reported wikispaces as environment that was convenient for them to upload their works for peer review as well as to provide feedback to their peers.

Table 1. Means (and Standard Deviations) of Student Ratings on Wiki's Functions (n=19)

	Upload my works for my group members to review.	Download/visit my group members' works.	Provide feedback to my group members.	View feedback from my group members.
When doing peer review in Wikispaces, it is easy to	1.47(.70)	1.42(.51)	1.37(.05)	1.32(.48)

A richer data set and analysis on other survey questions and peer feedback analysis will be presented in the full SITE paper.

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