Title:

Instructional theory development: Implementing a class wiki to support culture of sharing (case two)

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Short Description:

A literature-based instructional theory--designing a class wiki to support collaborative learning--was implemented in an undergraduate-level course. This paper reported the evidence regarding how well the instructional methods worked, the proposed refinements, and the expert instructor's tacit knowledge. The findings included students' behaviors, perspectives on using the wiki to support learning, and the expert instructor's strategies to transform traditional education into a learner-centered learning experience with a class wiki.

Abstract:

Introduction

Wikis, as one of the most powerful Web 2.0 tools for collaboration, have been explored for potentials to support learning in the learner-centered paradigm. As wikis

allow users to collaborate, communicate, edit and document all revisions, they were implemented for collaborative tasks in education. However, prior research identified several major challenges in classroom, including poor group dynamics due to the lack of trust among students (Elgort, Smith, & Toland, 2008; Robertson, 2008), lack of student motivation (Ebner, Kickmeier-Rust, & Holzinger, 2008; Cole, 2009), and others such as the assessment issue. This research project aimed to generate the theory and evidence-based instructional methods to resolve issues and maximize benefits of using wikis to support collaborative learning through a close collaboration between the researcher and expert practitioners. The results of the study suggested strategies to help students perceive usefulness of wikis for collaborative learning, become motivated, and develop a "give-a-take" culture, which are the gaps identified in prior research.

Methodology

Design-based research (DBR) was the primarily research method used in this project to develop, implement, and refine the instructional theory in iterative cycles based on the literature, the expert practitioners' expertise, and the evidence of methods' effectiveness in local settings. This paper focused on the theory's second implementation in a course for one term (twelve weeks) to investigate the research questions:

- How well the instructional methods worked?
- What potential changes should be made?
- What was the expert practitioner's tacit knowledge guiding his performances?

The data, mostly qualitative, were collected from the following sources: weekly class observations, instructor interviews, a student focus-group interview, and content analysis of the class wiki.

Participants and contexts: The expert instructor, who had taught in higher education for more than ten years and integrated wikis in teaching for more than seven years, was identified through the researcher's search for class wikis owners. The expert instructor was also the course coordinator, collaborating with another two instructors, to develop the course materials and facilitate all students' collaborative learning on one class wiki. Each instructor had about 25 students. The course was taught in a lab environment, where each student had access to a computer. The researcher observed the expert instructor's classes, interviewed some of his students, as well as analyzed all students' behaviors on the wiki and interviewed all three instructors.

Findings

During the conference presentation, the researcher will share findings from implementation of the following six instructional methods, which were established in the initial stage of theory development: M1. Prepare the course objectives, collaborative projects, and the class wiki site. M2. Introduce the wiki site to students and build their confidence in using the wiki for collaborative tasks. M3. Foster a learning community. M4. Foster small-group collaborative learning. M5. Scaffold collaborative learning, cognitive development, and self-directed learning. M6. Assess learning outcomes. However, due to the word limits, this proposal only presents the key findings in M2 and M3.

Introducing wiki for collaboration (M2). Firstly, the expert instructor explained that the goal of the wiki project was to support students in developing collective knowledge and skills in the course. The ultimate goal was to develop a culture of sharing, which was valued not only in this course but in workplace. Students were expected to learn from peers and from their own participation in knowledge construction, as the instructor explained to his students, “You know, what’s the better way to learn than having to teach it? So, if you guys are sharing with each other, it helps reinforce your own thinking and helps reflect your thoughts.” Secondly, the expert instructor elaborated on the new model of learning on wiki to help students rethink potential conflicts and change their choice of behaviors. For instances, the instructor helped students understand that collective work on wiki needed everyone’s participation, and the wiki content changed over time for updates and improvements. He discussed with students about the model of learning, which shifted from teachers’ delivering knowledge to students’ constructing their own experience, as well as students’ fears of editing peers’ work or their work being edited, as he said, “Don’t be offended but don’t be afraid, either.”

Fostering a learning community: To maximize participation and develop the ownership (M3). During this implementation, the expert instructor successfully fostered the learning community by establishing students’ belief in their ability to contribute to peers’ learning and facilitating the process of knowledge co-construction on the wiki. One of the key strategies was that the instructor not only encouraged students to participate but stressed on the quality of their contributions. Several discussions helped students develop thinking about wiki contributions, which should be relevant to the course, and most importantly, valuable to their peers. The wiki content analysis showed

that students posted resources, created step-by-step instruction, organized content, answered questions, and etc. Several students shared their appreciation of the community building project for the emotional and cognitive support, as well as the challenge for doing better work. The other two instructors also confirmed that the power and effectiveness of collaborative learning on the class wiki given that their students were inspired, motivated, and learning from their peers. One instructor said, “It’s the power of the collective. In an environment like this (wiki), with weekly classes, we managed to do more than just delegating the lecture and asking people to hand in their projects in a memory stick at the end of the day.”

Conclusion and Discussions

During this implementation, the instructor offered strategies and expertise regarding how to successfully foster a learning community through collaborative knowledge construction. The most inspiring process was how the instructor fostered “a culture shift among students,” which was previously identified as a challenge in educational wiki research (Kear, Woodthorpe, Robertson, & Hutchison, 2010). In the conference presentation, the researcher plans to discuss the instructional methods, the evidence from students’ perspectives and behaviors, the expert’s tacit knowledge, and proposed refinements for the instructional methods.

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