Using Web 2.0 for Innovation and Information Technology in Education Course

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Abstract

New era of World Wide Web: web 2.0 features such as social network, blog, wikis are the most effective method of people connecting, knowledge sharing and comment posting to the world community. In this paper, web 2.0 technologies were transformed to focus on the main learning management for innovation and information technology in education class, 1st semester 2011 which is one of the teaching profession course for bachelor of education. The course was implemented in 30 hours using Wikispaces as a content management system in information technology, innovation process and database for education content. The course provided tools, activities, social software and forums to students who had participated in the class or off campus. The results found that students had an argument, discussion and comment for all forums. They had an opportunity for thinking, self-learning and developing in innovation for education. They also created their own wikis to present their understanding of the innovation and information technology skills and technological pedagogical content knowledge (TPCK). The effective improvement of using web 2.0 was that teacher and students should take immediate feedback for all forums, reduce of feeling and general knowledge comments or discussion, and beware the plagiarism form websites.

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1. Introduction

Web 2.0 is a second phase of World Wide Web that show more interactive, collaborative and facilitative feathers. There are many Web 2.0 technologies and services such as blog, wikis, RSS, mash-up and tags which are the powerful tools providing user interface, flexible web design and social network base (Murugesan, S., 2007). For educational purposes, Web 2.0 was used in higher education aspect for example E-learning, online teaching and learning, collaborative writing, wikibook and designing teaching material (Karasavvidis, I., 2010). The potential for using Web 2.0 tools to student and lead them to innovator is mostly available in higher education. They also use Web 2.0 technology as Web-based communities to integrated their personal knowledge with people on social network and everyday life (Collis, B., & Moonenb, J.). Wikis is the most empower tools for education and variety purposes. As an engineering, nurse and pharmacy education, Wikis was introduced to students with knowledge and tools for practicing critical thinking in the classroom. In twenty first century skills, students have to integrated information technology in learning environments as Wikis technology promote effective collaboration, social-constructivist and project-based learning (Sua, F., & Beaumont, C., 2010).

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In 2004, Faculty of Education and development Sciences, Kasetsart University, Kamphaeng Sean campus contributed to produce teachers in English, Mathematics and Physical subjects. All students need to enrol in the teaching profession courses to complete their undergraduate degree. Innovation and information technology in education is the one of teaching profession courses that has improved a performance of Information and technology to innovate educational tools, learning process and learning management through practical work. This course is also building technological pedagogical content knowledge (TPCK) to serve the teacher performance on ways of using information and technology in appropriate and effective classroom (Bower, M., Hedberg, G.J., & Kuswara, A., 2010) (Nelson, J., Christopher, A., & Mims, S., 2007). Course management was generally practical computer software such as Macromedia Flash to create their instructional teaching on their knowledge subject. In 2011, the course was changed from learning with only practical programs to additional web 2.0 capabilities instead. The course was designed and studied an effective of using a content management system. The purposes of the research were: to design learning and teaching management for the Information Technology in Education course using web 2.0 and to study the effects of using web 2.0 for the information technology in education course.

2. Methodology

The population was 61 sophomore students, English and Mathematics major, who enrolled in the innovation and information technology in education course in 1st semester 2011. This research design used one group pre and posttest. Observation and questionnaires were collected.

2.1. Course Design

Wikispaces, top 5 web-based learning, (Gonzales, I., & Vodicka, D., 2010) was planned to be a core content management system and plus more web2.0 technology for example Facebook, Youtube, Google feathers: calendar and Gmail, to support effective learning information technology resources, innovation processes and databases for educational content. The course first introduced student to know about web 2.0 technologies and their characteristics. The students needed to understand and practice the feathers of Google for connecting and supporting their information resources such as email, calendar, chatting, reminder and Google+. In the second step called member state, students accessed Wikispaces; http://kopchem.wikispaces.com where they could learn on the content management system and the content of information technology in education. The content consisted of five main chapters; database access for learning resources, innovation process and evaluation and program practicing. Moreover practical software program and open mind forum were supported on Wikis. In the third step called organizer state, students practiced to be an instructor for designing and creating their own Wikis especially in their major content. The course provided 30 hours to encourage and practice student’s ability of learning, designing and using Wikispaces in the classroom. Moreover after class, students could practice their thinking skills, connecting friends and instructor, via tasks. The last step called innovator step, students used Wikis to present innovation process and their innovation project on instructional media.
2.2. Course description and evaluation

Aims of the course: students understand knowledge management for creation of educational innovation, learn on sources, data base of education and innovation network. Students practiced using Wikispaces as a member for 8 hours. They could understand a duty of posting, discussion, sharing knowledge with group studying. For the next 8 hours, students learned how to use Wikispaces as an organizer. They practiced all functions of contributor, instructor, group monitor and content provider. For the last 14 hours, they learned on the software program Macromedia Flash to be a tool for creating their innovation. All activities and tasks were evaluated using rubric score. The examination of student ability of using wiki involved both quantitative and qualitative measures using questionnaire and observation.

3. Finding and Results

This is the first change of learning management of the course. 100% of students did not have prior knowledge of content management system, web 2.0 and Wikispaces. After the end of the course found that 80% students had A grade (≥80% of score). For the questionnaire, students evaluated their abilities in using Wikispaces (Shu, W., & Chuang,Y., 2011). They could send the assignments on time, follow the direction as a member of Wikispaces, present pictures, text and video clips, use search engines and data bases and transform their knowledge. The innovation project of instructional media found that students could create their innovation using problem based on the interested school near the University. Many schools need the instructional media for off-line learning such as computer assisted instruction, E-books, cartoon books for education and game board. Because of no internet services and lack of information technology, the teachers did not confidence and familiar to use a content management system in their school.

For Observation, students comment Wikispaces.com was a new website. It was easy to use in web creation but it was a different way of organizing contents and services for member who accessed their wikis. The problems of the course were that students were not familiar with the content management system and felt it was difficult to establish their own wikis (Huang, W. D., & Nakazawab, K., 2010). The inconsistency of internet service made it difficult to finish student’s tasks. The tasks were focused on discussion, and comment was not successful because students mostly post general knowledge and emotional words or sentences. Plagiarism from websites was found in 20% of
the tasks. An effect of the course was that students could follow the course and finish the tasks on time. They had the performance to transform knowledge through their Wikis.

<table>
<thead>
<tr>
<th>Description</th>
<th>level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I can use Wikispaces.</td>
<td>3.84</td>
</tr>
<tr>
<td>2. I can present picture Wiki video clip and text on.</td>
<td>4.31</td>
</tr>
<tr>
<td>3. I follow and discuss comment via Wikis.</td>
<td>4.38</td>
</tr>
<tr>
<td>4. I understand lesson plan each week.</td>
<td>3.94</td>
</tr>
<tr>
<td>5. I follow and discuss comment via Wikis.</td>
<td>3.84</td>
</tr>
<tr>
<td>6. I can send the assignments on time.</td>
<td>4.70</td>
</tr>
<tr>
<td>7. I can use search engine and database.</td>
<td>4.28</td>
</tr>
<tr>
<td>8. I am satisfied on learning management on the course.</td>
<td>4.06</td>
</tr>
<tr>
<td>9. I have computer skills.</td>
<td>4.00</td>
</tr>
<tr>
<td>10. I can transform my knowledge on Wiki.</td>
<td>4.16</td>
</tr>
<tr>
<td>11. I have a self learning ability.</td>
<td>4.09</td>
</tr>
<tr>
<td>12. I have thinking skills.</td>
<td>3.81</td>
</tr>
<tr>
<td>13. I understand web 2.0 technology.</td>
<td>3.41</td>
</tr>
<tr>
<td>14. I practice in the course that can be a tool for developing innovation.</td>
<td>3.94</td>
</tr>
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4. Conclusion and Recommendations

Students had the ability to use Wikis as member and organizer state. They understand the capability of computer user not a computer programmer. They could select a suitable web 2.0 technology that match with the content and learning process. It could build TPCK to their teaching process though their practice using web 2.0 tools.

The next semester, the course will be rearranged more efficiently and easy to understand on using Wikis. The video clip of using Wikis step by step will be post and share for members. The important thing for making dynamic discussion in every forum is to post comment all forums and add more categories of discussion that build student’s ability of thinking.

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References