

Editorial

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Biographical note: Qiyun Wang is an Assistant Professor in the Academic Group of Learning Science and Technologies at the National Institute of Education, Nanyang Technological University, Singapore. He is the Chief Investigator of the research project 'effective use of weblogs for teaching and learning'. In the past three years, he has published more than twenty academic papers in internationally referred journals and books. He is also guest-editing several special issues for international journals. His research interests include online learning, web 2.0 tools, multimedia instructional design, constructivist learning and interactive learning.

1 Introduction

Web 2.0 refers to a perceived second-generation of web-based tools that enhance sharing, interaction and collaboration among its users. The first-generation of web technologies (or so called web 1.0) is primarily meant to deliver information from the web server to users. Mainly, it supports one-way information delivery only. The web 2.0 technology, however, enables two-way communication. The users are not only information consumers, but also information contributors. They can create, upload new information to the web server. Also, they can further modify information published. Web 2.0 web pages such as iGoogle are more likely to be multimedia programs, in which users can create new tabs, add new objects, or drag-and-drop objects to any position on the interface.

Web 2.0 has great potentials for teaching and learning. Numerous teachers and researchers have started exploring how to integrate web 2.0 technologies into their teaching and learning. In this special issue, ten papers are selected to describe how various web 2.0 tools have been used in different settings. The web 2.0 tools covered in this special issue include weblogs, wikis, podcasts, discussion forums, Really Simple Syndication (RSS), Facebook and other open-source platforms.

2 Weblogs

The weblog is basically an online journal writing tool, by which bloggers can publish information, share ideas and receive comments from others. It can be used by teachers to

publish course information, teaching resources or announcements. In addition, It can be used by students to write online reflections (Wang and Woo, 2008).

Churchill presents a case study where he as a Lecturer used weblogs to post announcements, provide course information, link students' blogs and post his own reflections and summaries for students to read. It is a successful sample of teacher's use of weblogs. His experience suggests that when appropriately managed by a teacher, the weblog has the potential to effectively support various teaching and learning activities, such as accessing and reading blogs of others, receiving comments and previewing completed tasks of other students and reading feedback in relation to the tasks. Further, he suggests some strategies for encouraging students to actively blog.

Quek presents another research study where a group of 25 in-service teachers used a weblog-based learning environment created. In this study, the in-service teachers played two roles. They were student participants of the course. Meanwhile, they were also teachers in schools. Their experiences on the use of weblogs in this course would affect the integration of Web 2.0 tools into their teaching. This article describes the in-service teachers' experiences in the weblog-based learning environment, the characteristics of a useful weblog for learning, and their concerns of using weblogs for teaching and leaning in schools.

3 Wikis

A Wiki is a collaborative web page, which allows users to gather, share, evaluate and edit its content directly through the page (Achterman, 2006). In education, it is useful for a group of students to write collaboratively a piece of work such as a proposal or an essay. In addition, it allows users to track the developmental process of the work. For instance, users can check who has changed what content at what time. Obviously, it is useful for the teacher as well as the group members to identify the individual contributions of the group members to the artefact.

Wikis have shown great potentials in education. A number of educators have explored the ways of integrating wikis in their curricula. Hew and Cheung reviewed 26 empirical research studies on the use of wikis in K-12 and higher education settings. They found that most of the studies were descriptive and conducted in higher educational settings. Students liked the asynchronicity and traceability features of wikis. However, no evidence showed that the use of wikis improved students' learning outcomes. The effectiveness of wikis was heavily influenced by the factors of wiki usability, pedagogical design, social environment and students' technical competencies.

Pardo and Kloos applied wikis in a blended learning environment designed for a Masters' course. In this study, not only groups used wikis for collaborative writing, but also individuals used wikis to work on their artefacts. The benefit was that the students could access directly the work of each other without the need for costly and error prone email exchanges. In addition, the email notification feature benefited students, for the students could be notified automatically once the content had been modified.

Secundo, Grippa, Maggio and Vecchio integrate wikis in the Applied Learning Laboratory (ALL). The use of wiki is to promote the interaction between the mentor and learners. The mentor guides preliminary discussions through focus questions on the course wiki pages, and also provides feedback to the learners. Learners can share their comments within the collaborative space through wikis. In another similar study, Elia,

Margherita and Taurino create a wiki-learning space in the ALL to facilitate a community of participants in the acquisition of managerial competencies. In this space, peers can add new posts, comments and suggest new resources for solving problems.

4 Podcasts

Podcasts are digital audio files that are distributed over the internet using syndication feeds, and are available on the Web to the public for free downloading to a personal computer or a digital audio player. Compared to weblogs which are mainly text-based, podcasts are audio-based.

Salam and Wang used podcasts and Weblogs in a social study subject to facilitate the students in a secondary school in thinking aloud, self-reflections and online discussions. The students were first given a problem. Before typing out their answers in texts directly, they were encouraged to speak their ideas out and recorded in podcasts. This process would help the students to think aloud freely without concentrating on the writing process, as many of them had writing difficulties. Then, they were guided to write their ideas down and posted in text as weblogs for their peers to view and comment. They found that the design of combining podcasts and weblogs increased students' confidence in articulating their ideas.

5 Discussion forums

Discussion forums are web-based spaces where users can share information with others and also collect peoples' opinions or feedback. Research indicates that online discussions have numerous advantages such as promoting students' critical thinking and knowledge construction (Marra, Moore and Klimczak, 2004) or improving students' relationship (Powers and Mitchell, 1997). These advantages, however, heavily depends on the social interaction happened in the forums. Understanding how interaction happens is vital for teachers or facilitators to make online discussions more helpful.

Zhao followed a socio-gram approach to analyse group interaction. He found that social interaction did not naturally happened in groups. Students must know how to communicate and interact with others. His study confirmed that setting up ground rules and sufficient moderation was critical for online discussions. In addition, he identified that even though discussion forums provided an equal opportunity for every participant to voice their opinions up, there was still a possibility that online discussions were dominated by few more active students.

Zhu and Smith also used discussion forums and other web 2.0 tools to build students the habits of mind and improve their learning outcomes. They found that the students used the discussion forms to share their stories with a huge audience internationally, and the use of the web 2.0 tools could help students to gain authentic leaning experiences.

6 Facebook and other open-source platforms

Besides the separate web 2.0 tools abovementioned, a number of open-source platforms that integrate several web 2.0 tools are also available nowadays. Facebook is a one of the

open-source platforms. Idris and Wang present a conceptual paper, in which they describe the affordances of Facebook from pedagogical, social and technological aspects. In terms of pedagogical aspect, Facebook has the potential to support innovative leaning approaches such as life-long learning, student-centered learning and collaborative learning. In addition, it can motivate students' participation, present multimedia materials and enable students' reflections and sharing. In social affordances, Facebook can promote various types of interaction like peer to peer, students to the teacher and students to the whole community interaction. In addition, Facebook allows asynchronous and synchronous communications to take place. Regarding the technological affordances, Facebook enables users to customise its interface, add additional applications and provide stable availability and internet access.

Pardo and Kloos designed a learning environment for a course using another open-source platform: LRN, which supports digital communities and provides various web 2.0 tools. In their study, they used the discussion forum, file storage and wiki functions. The results showed that the learning environment supported interaction and was productive. Elia, Margherita and Taurino used a different open-source platform called Drupal to host their learning space. They integrated weblogs, wikis, folksonomies and RSS into their learning space. The tentative result of their study showed that the learning space promoted interaction between peers and super-peers.

7 Conclusions and suggestions

This special issue leads to the following conclusions and suggestions. Firstly, Web 2.0 tools have potentials in education. It can be used by a variety of audience (teachers, primary or secondary school students, undergraduate or post graduate students or managers), in different settings (schools, universities or companies) and for different purposes (promoting problem-based learning, case-based learning, managerial competencies or thinking aloud skills).

Secondly, integrating various web 2.0 tools into a single learning environment seems to be necessary. Although some of the tools (like Weblogs and discussion forums) look similar on the surface, they differ in many aspects. Proper selecting and using these tools for different purposes becomes critical. It would be a better idea to involve various tools in a learning environment to meet different needs, for instance, using the weblog to promote students critical thinking and using the discussion forum to negotiate ideas and construct knowledge. Several studies in this special issue involve different web 2.0 tools in a single learning space, and the results have indicated that they can supplement each other and make learning more meaningful.

Thirdly, no concrete evidence shows that the learning environments developed using web 2.0 technologies increase leaning outcomes. Most of the studies presented in this special issue are descriptive. They investigated the users' perceptions, and the results indicated that the use of the web 2.0 tools had the potential to promote students interaction and collaboration. However, to what extent the learning environment can increase students' learning outcomes is unclear. More research in the future should focus on how to use the web 2.0 tools to make learning more effective.

Finally, the design of an effective learning environment must focus on pedagogical, social and technological design. Without sufficient support of technologies, undoubtedly many pedagogical and social design activities will be hard to implement. However,

simply putting advanced technologies into a learning setting will not make effective learning naturally happen. The primary factor that influences the effectiveness of learning is not the availability of the technology, but the pedagogical and social design (Wang, 2008). The technology should be fitted into the curriculum, not the curriculum into the technology (Earle, 2002).

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