

Analysis of Informal Use of Social Media in Formal Project-Based Learning

Shinichi Sato

Nihon Fukushi University, Japan

Makoto Kageto

Nihon Fukushi University, Japan

Gary Kirkpatrick

Nihon Fukushi University, Japan

The authors host an international collaborative event annually, and their students prepare for it through compulsory project-based learning (PBL) activity in their program. Students communicate and share information in several ways during PBL—for example, through formal project activities and informal interaction. Recently, many students have come to use Facebook, as well as the university's in-house system for social networking, in PBL. This study aims to reveal what kind of activity takes place on these social networking services (SNSs) during PBL by observing the students' formal and informal use of them, and to discuss the possible effects of the mainly informal posts that take place on both sites. The analysis shows that the main platform for informal communication has shifted from the campus SNS to outside SNSs. Further, the nature of these informal posts was different for each SNS. The potential of these SNSs for PBL and what can be done to advance it are discussed based on the survey results.

Keywords: social media, social networking services, project-based learning, informal learning

Introduction

Social media is now a popular tool worldwide, and many pedagogical practices using it have been reported (Liu, Kalk, Kinney, & Orr, 2012). Some educational institutions use social networking services (SNSs) as a learning platform instead of preparing in-house learning management systems (LMSs). In addition to services that people all over the world can use, like Mixi (a popular SNS in Japan) and Facebook, services and software exist to host a dedicated SNS for a specific purpose. For example, it is possible to develop one's own SNS using a web application like Ning (<http://www.ning.com/>).

These systems have also been used in education. Students appear to develop more autonomy when they use an SNS rather than an LMS, and prefer the SNS' user interfaces and functions to those of typical LMSs (Madge, Meek, Wellens, & Hooley, 2009). Studies indicate that students

learn informally when using SNSs (Greenhow & Robelia, 2009). Therefore, Blackmore (2010) indicates, universities should consider the connections between formal instruction in class and students' informal activities on SNSs in order to develop an environment in which student-centered learning can be practiced effectively.

Because social media has become popular, the authors have been using it in project-based learning (PBL) activities for first- and second-year students in their department, the Department of International Welfare Development, at Nihon Fukushi University in Aichi Prefecture, Japan. PBL is believed to promote a positive attitude and independent thinking among students (Boss and Krauss, 2007). In the department's PBL activities, students and teachers use a campus SNS called "Fuxi" to share information about projects (among other uses). The authors have also started a Facebook site. In addition to using this SNS to actively work on their projects, students appear in general to be more at ease discussing project activities online. Thus, they use the SNS both formally and informally for PBL, and even informal use for projects seems to be extensive. This study analyzes the use by the authors' students of social media like those mentioned above and discusses how the design of PBL activities and learning environments can be improved for this social media era.

SNS Use in Education

Many educational activities have used SNSs, and much research has considered them. For instance, Pollara and Zhu (2011) used Facebook in a high school and university science-mentoring project. They conducted a questionnaire survey and found that Facebook worked well for collaboration and that students preferred it to the available LMS. Borau, Ullrich, Feng, and Shen (2009) used Twitter in EFL (English as a foreign language) classes, concluding that it was effective in increasing students' communicative and cultural competence. There are many other practices in which teachers and/or students have used social media for formal purposes in the classroom.

As young people spend more and more time using social media, the informal learning that happens as a result is gaining the attention of practitioners and researchers in education. Studies indicate the necessity of taking into account the whole learning environment, both within and outside the school setting (e.g., Barron, 2006). Bull et al. (2008) stated that informal learning experiences outside school offer a potential bridge between social media and academic content, and indicated the necessity for educators to consider how to bridge in- and out-of-school uses of technology by means of collaboration between faculty members and students. Lee, Kim, and Kim (2011) followed a student who participated in an exchange abroad program and showed how Facebook can be a source of insight into the experiences of such students. They noted that the informal nature of SNS allows users to express themselves in a more relaxed manner than an official report and provides a different and useful perspective on their experiences.

As mentioned above, several studies examine SNS use among people in their university years, and SNSs seem to have potentials to use effectively in education, such as for teachers to know about students' situation better, building appropriate learning communities for students' collaboration, reflecting on learning experiences, and so on. However, it is still controversial

whether social media like Facebook are effective for education, and far more research is necessary to obtain insights into how teacher organize learning environments incorporating these emerging technologies. For example, Vivian (2011) found that students thought of Facebook as a distraction and a means of procrastination during study, and concluded that some sort of learning strategy was necessary if students were to benefit from its use. Greenhow and Robelia (2009), in their qualitative research on high school students' use of SNS, found that the students did not perceive a connection between their online activities and learning in the classroom. When teachers use these SNSs in their education, earlier studies indicate that they should be cautious in using popular SNSs and should consider their instructional design in detail, because students sometimes do not want to participate in SNS use with their teachers in the classroom (e.g. Kyei-Blankson, Keengwe, & Blankson, 2009; Madge et al., 2009). How to deal with the informal nature of students' learning is another challenge that needs to be addressed. Ryberg and Wentzer (2011) stated that it is important to consider how to deal with academic spaces and social spaces—for example, if they should be separate or if their boundaries should be blurred. Besides these challenges, SNS use in such studies is greatly influenced by their contexts; therefore, the findings of these studies may also require further verification if an accurate sense of their level of generalizability is to be acquired.

Research Questions

This study attempts to ascertain how students use SNSs in PBL. In one of the PBL activities engaged in by the authors' students, they use a campus SNS ("Fuxi"; Kageto & Sato, 2010) and some also use Facebook as part of their official role in the project. Other than these official uses, many students use Facebook and Mixi independently of the project. They sometimes post casually about the project on these sites. This paper mainly focuses on the informal use of Fuxi and Facebook by students, referring briefly to Mixi for comparison because Mixi remains a perennial favorite in Japan. The following research questions were set:

1. How are students using Fuxi and Facebook in ways related to the project?
2. How is the use of these tools changing over time in relation to the growing popularity of Facebook?
3. What kinds of effects are expected from the informal use of these systems?

By analyzing these issues, the authors' aim is to obtain some clues to how to better understand the appropriate use of these environments for better project design.

There are several definitions of informal learning. Knapper and Cropley (2000) describe informal learning as learning outside of the classroom, which they assume is by definition unstructured. However, this demarcation of formal and informal learning is likely to be vague. This study considers "informal use" of SNS to comprise all uses except those aimed at the completion and execution of the project. For the project, students were instructed by the teacher to keep formal meeting minutes even when meeting away from teacher supervision. Thus, for example, sharing meeting minutes or discussing project administration on an SNS, which generally occurred under the teachers' supervision, is considered to be formal, while talking about project-related issues in a relaxed manner or introducing the project to friends away from teacher supervision as informal.

Methodology

Analysis of the Students' SNS Use

This section presents the method of analysis of students' SNS use for communication, both within and outside school. The student participants were all from the authors' department; about 30 to 50 per year were included. The use of both a campus SNS, Fuxi, hosted by the university, and a popular commercial SNS, Facebook, is examined, as is the relationship between the project and the use of both these SNSs. Further, the results of questionnaires conducted as part of PBL, and in other classes in the department, were collected in order to acquire basic information on the students' SNS use and their impressions of SNS use in relation to PBL.

The university introduced Fuxi in 2007. It has two main functions: a diary function, much like a blog, and an electric bulletin board system (BBS). All students and faculty are free to use Fuxi functionality in any way they like. For example, when students engage in group work, they can use Fuxi to share information; also, they can make posts to communicate about diverse matters with their peers and teachers. The department was founded in 2008; hence, it was decided to analyze changes in students' use of Fuxi from 2008 to 2011. All such log data was analyzed, as well as the content of posts. Students' log data and posts were available under a university bylaw allowing the use of data in campus systems for the purpose of education and research, and all students were notified about the possibility of this use when they signed up to the system.

In addition to the campus SNS, many students also use social media outside the university setting. Although Mixi was until recently the most popular SNS in Japan and is still among the top two or three, Facebook has been spreading rapidly and the students in the department now use it more. Therefore, students' use of Facebook was examined in more detail than their use of Mixi. The study focuses on first- and second-year students because most of these students are involved in PBL activities, which are common in the department. Qualitative data were taken from students who were Facebook friends with at least one of the authors. All the authors use Facebook on a daily basis and are Facebook friends with many of their students. This research is an initial step toward considering the possible effects of SNSs on formal learning inside a university; hence, 10 students who were frequent Facebook users were chosen from among the authors' Facebook friends. Five of these students entered university in 2012 and the other five in 2011. It is difficult to comprehensively analyze students' SNS use because of the massive amount of data involved, privacy settings, and other complications, and so only posts that were available to the authors as Facebook friends of these students were selected. However, this analysis still provides a rough sense of how the students use Facebook, and can thus inform better instructional design. Although not many students used Facebook until the last few years, it has rapidly become popular since then; hence, Facebook data for the years 2011 and 2012 were used.

The authors counted the number of articles posted on Fuxi's BBS and in the students' online diaries from April 2008 to March 2012.

Practice of PBL

This analysis focuses on two PBL programs. One involves hosting a collaborative international event called the World Youth Meeting (WYM), and the other is an overseas study tour in which students visit a foreign country and study there. These are the two major PBL programs in the department.

The WYM gathered more than 700 participants from outside and within Japan. The core activity of this project is joint presentations conducted in English; in addition, it involves many other activities, such as homestays, sightseeing at historical places, and staying in ryokan (Japanese-style inns). First- and second-year students start to prepare for the WYM in April; third-year students are not directly concerned with the WYM, but they support the younger students as advisors on the basis of their previous experience.

A preliminary event for the Japanese participants is held on a weekend around the end of June. The actual event is held over two days at the beginning of August; overseas participants stay in Japan for about 10 days. After the event, summer vacation begins, after which, from the middle of September to the middle of October students reflect on their WYM activities in the classroom, guided by their teachers.

In the overseas study tour, each student chooses a country to visit—Cambodia, India, Malaysia, or the Philippines. They attend lectures and plan some activities of their own, for example making presentations, acting in traditional Japanese dramas, or hosting exchange activities. Students start preparation for the tour in September or October and stay about two weeks in the country, from the middle of February. After coming back to Japan, they compile a report on their experience. The students encounter many people through these activities and often become friends on Facebook.

Results

Usage of the Campus SNS

Students use the same BBS to share information for WYM or study tour preparation. Posts in the BBS are managed in two layers: a topic and its comments. Students set a group's topic and create a discussion by making comments. Each group's records are displayed in reverse chronological order. For the overseas study tour, students set topics for discussion on activities such as making presentations, dance performances, or preparing souvenir gifts, and post comments under each topic.

This method of using the WYM BBS was established in 2009, and the number of posts stayed almost constant until 2011. For the overseas study tours, until 2009 some teachers encouraged BBS use on Fuxi while others did not, and hence only some groups used the BBS. From 2010, however, even groups that were not guided by a teacher started using the BBS on Fuxi. Log data shows that the students access not only their own group's discussions but also those of other groups (Sato & Kageto, 2010). This paper refers to the usage mentioned above as the "formal

use” of Fuxi, within the official school curriculum.

On the other hand, topics were sometimes discovered that dealt with topics other than the concrete tasks before each group. For example, in the topic “General Chat,” two types of post were seen. The first type outlined students’ efforts. For example, students might post pictures of other students’ activities to share everyone’s activities with one another. In contrast, the other type of post contained emotional content, such as enthusiasm or regret. However, these informal posts decreased in number over time. In 2008, students set two topics for this kind of informal communication and posted 43 posts. In 2009, there were still 34 posts; however, there were only seven in 2010, and the informal communication topic disappears entirely by 2011.

Similar informal content was also found in diary posts, although there were fewer of these. The diary function, although open to view by students and staff, is personal; students were allowed to use Fuxi as they liked, as long as they did not violate the terms of use. Some students did not post any diary entries.

With regard to PBL, all posts were basically informal. For example, one student, who was selected as one of the organizers of WYM2009, expressed her appreciation of the chance to challenge herself and grow. She also stated that she needed to express her opinion more now that she had become a leader, in contrast to the supportive, background role she had taken before. Some students commented on this post to encourage the writer, and declared their devoted support. Some students also added that they too were making the decision to break out of their shell. These posts were written in a casual manner, but thought clearly went into their composition: they used well-formed, considered, lengthy sentences.

However, these informal diary posts were also decreasing in number. **Figure 1** shows the total number of posts by first- and second-year students during the WYM period (from April to August) for each year. The number of diary posts has declined, although the number of formal posts has stayed constant.

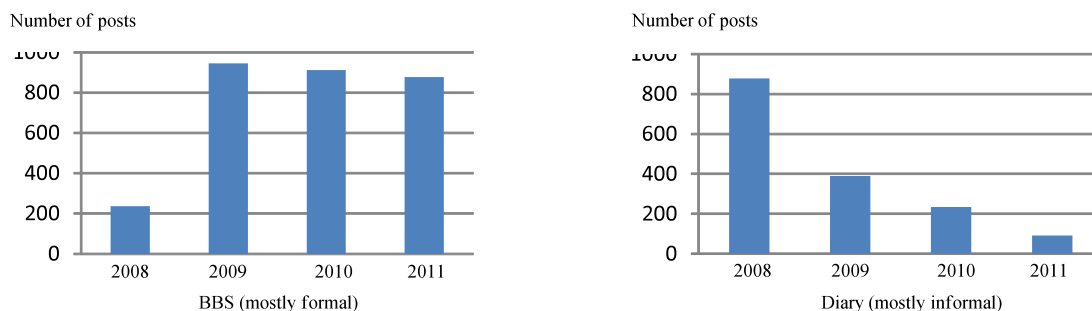


Figure 1. Number of formal and informal posts by first- and second-year students from April to August

Usage of Social Networking Sites Within and Outside University

Two features of Facebook have been used for formal purposes related to the WYM in the past two years: a Facebook page and a Facebook group. The Facebook page was used for PR purposes by a group of students in charge of PR for the WYM, outlining their efforts to build awareness and interest in the event. In addition, they aimed to share their progress with the participants, in order to motivate both the participants and themselves. They did this via the Facebook group, which was in this sense used for communication among past and future WYM participants.

Many students seem to have come to use Facebook only since around 2011. According to the questionnaire conducted in 2012, among 44 respondents enrolled in the PBL, only about 10% used Facebook when they entered university. By the period after the most recent WYM, in contrast, 98% of them had used Facebook. Teachers in the department have never forced the students to register on Facebook, although some might recommend it; instead, students seemed to come to use it under the influence of their friends and of older students.

As described by Selwyn (2009), most of the students' Facebook posts were on general topics. However, many posts were also related to the WYM. The second-year students had experienced the WYM and the overseas study tours when they were first-year students. They had encountered many non-Japanese students through these activities and had remained in touch with them through Facebook. (Almost everyone whom the students encountered during these activities used Facebook; hence, they could become friends online with relative ease.) To communicate with these people, the students sometimes posted on Facebook in English. First-year students soon came to use Facebook in this way, in imitation of their elders. In that context, their posts were generally very short, both in English and in Japanese. While students might post some volume of text (generally about 200 to 400 words, in Japanese) on Fuxi, Facebook posts might show only one or two sentences or even only pictures and no text. The students seem to enjoy the chance to post in a lighthearted, relaxed manner, rather than posting well-considered, serious messages, as they seemed to feel compelled to do on Fuxi. Students also posted content relating to the upcoming tours and WYM, such as pictures of their preparations. Figure 2 shows typical posts in Fuxi and Facebook.



Figure 2. Example of posts on Fuxi and Facebook

According to the student interviews, some students used the chat function on Facebook to talk to their friends, including overseas friends, when they saw them online. In contrast to the situation on Facebook, students had virtually no foreign friends on Mixi; hence, they posted in Japanese on that site. They seemed to use Mixi in an even more relaxed manner than Facebook. Most posts were about general topics; occasionally, however, WYM-related topics were also posted.

Discussion

The students' use of Fuxi and Facebook has been described in the Results section, and the different characteristics of their posts on each SNS given. The students' preference for posting informal information on the SNSs was observed as well. On the basis of these results, the potential use of these sites to improve learning is discussed below.

Characteristics and Possible Effects of Informal Posts

As more students come to use SNSs outside the university, their informal use of Fuxi features such as outlining activity status or making posts with emotional content has decreased, since activities of these kinds are now conducted mostly on Facebook. Sharing one's status is a kind of self-disclosure that is expected to help in the formation of a better learning community (Astleitner & Leutner, 2000). One more advantage of using an SNS that is accessible to people outside the university is that students sometimes receive comments from participants in the WYM who are at other schools and/or from other people in their lives. This motivates them to post with more frequency. Although the students in charge of PR posted articles on Facebook as a part of their formal activity, the other students' posts were self-motivated. They occasionally discussed their emotions, although those posts were rare and were obscured by a vast number of more casual posts. It also seems clear that Facebook is now more popular than Mixi among the students. However, some students reported that they prefer Mixi because they can enjoy communicating with old and intimate friends only, in a more private and relaxed manner than on Facebook.

Since students were seemingly on Facebook and/or Mixi for longer hours than on Fuxi, there were many more posts on these SNSs than on Fuxi. Likely responsible is the ability to receive feedback from and interact with a wide variety of people. Students seemingly enjoy the ability to convey their status to people with the help of visuals. When students used Fuxi for this type of interaction, only some made status posts; however, currently, an increasing number of students are using Facebook, instead of Fuxi, to post emotional issues and/or describe their state of mind, often through so-called "status updates." As described in Result section, posts on Fuxi tended to be longer and more profound, although less frequent. Now, students post content on Facebook and/or Mixi more frequently than they did on Fuxi; however, the messages tend to be very short and seem improvised. This seems to be due to the characteristics of each community. Students may feel shy about posting long, serious messages on Facebook, but less so on Fuxi, since there they are communicating only with very intimate friends within the university.

Through frequent mutual interaction of this kind, students can develop better, teamwork in formal PBL, stronger mutual understanding, and a more effective learning community. Thus, educators and researchers should devise ways to promote this kind of interaction among students. However, profound discussion, including discussion of students' emotions and motivations, seem to be disappearing as their informal use of Fuxi decreases. Moon (2004) indicates that detailed description of experiences and emotions is necessary to reflect on them effectively. In that sense, the kind of informal posts placed on Fuxi, which are diminishing, are nevertheless important to student learning.

Selwyn (2009) found five main themes in the Facebook wall posts of university students: (1) recounting and reflecting on the university experience, (2) exchange of practical information, (3) exchange of academic information, (4) displays of supplication and/or disengagement, and (5) banter. Although these categories require more detailed consideration, the students' posts on Fuxi and Facebook also seem to be along these lines. However, the breakdown of posts by type differs according to SNS. Selwyn found that most Facebook posts consisted of banter, and that reflection on university experience and exchange of academic information were rare. This tendency may change by SNS, as rather lengthy posts reflecting on the project were observed in Fuxi.

Users generally post messages that they think are appropriate for the place and atmosphere. Thus, the educational environment of each SNS should be considered in terms of that SNS's characteristics.

Future ICT Systems for PBL

To form a better community for learning, Astleitner and Leutner (2000) point out that it is important for community members to learn about one another through self-disclosure. Sharing a lot of information, both project-related and non-project-related, on Facebook and/or Mixi would work well in this sense. On the other hand, the opportunity for students to secure time to deeply reflect on their experience should also be considered. When the students posted informal content on Fuxi, this content was well considered and sometimes induced active discussion, which was an important opportunity for students to learn more from their experience and think about the meaning of each task they are supposed to perform, not merely how to perform it better. Open and frank discussion is very important. Although these discussions were infrequent, they were sometimes observed on Fuxi, outside the teachers' direction.

This activity most likely flourished and was meaningful because it was informal. Now, however, exchanges of this sort have almost been terminated. Facebook and Mixi may be too informal for students to post about serious issues. They have many friends on these platforms who do not share the relevant context; hence, they may hesitate to post about such issues. However, Fuxi enables them to exchange practical information at a determined time. There is a need for an intermediate place that is not too formal or informal, but that instead connects formal and informal learning—this will improve implementation of PBL.

There have been many studies on CSCL (Sawyer, 2006), in which students were expected to deepen reflection using ICT tools, some of them originally developed for the studies in question

(e.g., Scardamalia, Bereiter, & Lamon, 1994; Slotta, 2004). There have also been studies that compiled knowledge to build good virtual learning environments (VLEs) based on learning theories such as instructional design, constructivism, and so on (e.g., Jonassen & Rohrer-Murphy, 1999; Miller & Miller, 2000). The necessity for better VLE of considering the emotional aspect has also been pointed out (e.g., Lee, 2012). In light of these prior studies, consideration is needed of how to construct an ICT environment that takes advantage of not only in-house systems but also outside systems such as SNSs. The authors' previous effort to loosely connect an official website with students' informal SNS communities by using social plugins was a trial toward this end (Sato & Kageto, 2011b). Although detailed analysis is still necessary, it seems likely that this effort caused some positive effects for students to reflect on the project. This implies that teachers should support students by providing a venue for informal posting, and that they need to be careful to avoid giving a false impression that they intend to control all student activities. In that sense, a loose linkage between in-house and outside systems will be important for VLE in the future.

Teacher Commitment

In PBL, students are required to be independent-minded and think for themselves. However, as Kirschner, Sweller, and Clark (2006) indicate that provision of only minimal guidance in PBL leads to failure, the teacher's role is still very important. This means that it is necessary for teachers to be aware of their students' situation (e.g., Pritchard & Woollard, 2010). As described in the Results section, the students express a lot in SNS informally, monitoring the students' SNS usage may allow the teachers to keep track of these situations and support their students better, as well as for them to help students reflect on their experience. This role is important, because it is difficult for students themselves to identify the connections between their informal posts and their learning (Bull et al., 2008).

In this study, when students posted diaries on Fuxi, it was manageable for their teachers to follow all these posts. However, this task has become much more difficult, because students now use outside SNSs and post much more frequently. Information that teachers need to see is obscured by a vast number of casual posts. The authors have previously developed a viewer, PISION, to help teachers and students efficiently read many posts on an SNS (Sato & Kageto, 2011a). PISION worked well in Fuxi, and is still used in that context. However, the amount of data on Facebook can overwhelm teachers even using the reader. It nevertheless remains important to conduct this kind of monitoring of students' informal communications in order to provide them with adequate support. Thus, ways of collecting scattered posts and consolidating them into an e-portfolio should be considered (Zubizarreta & Millis, 2009; Nettleton, Lowe, & Dorahy, 2008). This issue should be examined in future research.

Conclusion

Students' use of Fuxi and Facebook was analyzed, leading to the observation that the informal use of the campus SNS Fuxi has been declining. Because of the recent popularity of public SNSs, the main platform for informal communication among students in the department has shifted from Fuxi to the outside SNSs Mixi and (mostly) Facebook. These posts should be a good source of information for teachers to support students better and help students learn more

from PBL. A difference in quality was also observed between posts on Fuxi and on other SNSs. The reflective and comparatively long posts that were sometimes observed on Fuxi before have been diminishing in number.

Based on the analysis of the students' use of SNSs within and outside the university, its possible effects and the potential to make more effective use of these environments were discussed. Informal posts by the students would be useful, for example, for teachers to obtain clues as to students' situation, and for students to reflect on their experiences. Therefore, teachers should incorporate SNSs outside the university, and consider how to relate them to formal PBL activities. Preparing a website that serves as an intermediary between formal activities and students' posts about them on SNS would be one potentially effective method for this.

It will be a challenge for the future to determine how to encourage students to reflect deeply on their experience and post reflective content, and also how teachers can support their students using the vast data stored in SNSs. The best platform for eliciting and sharing these posts should also be considered.

Students' use of SNSs will continue to change, both individually and collectively; hence, the authors intend to focus on these changes over time and analyze data from these sites in more detail in order to develop a model that integrates social media for better PBL.

References

- Astleitner, H., & Leutner, D. (2000). Designing instructional technology from an emotional perspective. *Journal of Research on Computing in Education*, 32(4), 497–510.
- Barron, B. (2006). Interest and self-sustained learning as catalysts of development: A learning ecology perspective. *Human Development*, 49(4), 193–224.
- Borau, K., Ullrich, C., Feng, J., & Shen, R. (2009). Microblogging for language learning: Using Twitter to train communicative and cultural competence. *Advances in Web Based Learning—ICWL 2009*, 78–87.
- Boss, S., & Krauss, J. (2007). *Reinventing project-based learning: Your field guide to real-world projects in the digital age*. Washington, DC: International Society for Technology in Education.
- Blackmore, C. (2010). *Social learning systems and communities of practice*. New York: Springer Verlag.
- Bull, G., Thompson, A., Searson, M., Garofalo, J., Park, J., Young, C., & Lee, J. (2008). Connecting informal and formal learning experiences in the age of participatory media. *Contemporary Issues in Technology and Teacher Education*, 8(2), 100–107.
- Greenhow, C., & Robelia, B. (2009). Informal learning and identity formation in online social networks. *Learning, Media and Technology*, 34(2), 119–140.
- Jonassen, D. H., & Rohrer-Murphy, L. (1999). Activity theory as a framework for designing constructivist learning environments. *Educational Technology Research and Development*, 47(1), 61–79.
- Kageto, M., & Sato, S. (2010). Rethinking the university learning environment: How to enrich students' education through a constructivist learning environment. *International Journal for Educational Media and Technology*, 4(1), 67–78.
- Kyei-Blankson, L., Keengwe, J., & Blankson, J. (2009). Faculty use and integration of technology in higher education. *AACE Journal*, 17(3), 199–213.

- Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, 41(2), 75–86.
- Knapper, C. & Cropley, A. (2000). *Lifelong learning in higher education* (3rd ed.). London: Kogan Page.
- Lee, I. S. (2012). Research trends on emotional factors in the e-learning context. *International Journal for Educational Media and Technology*, 6(1), 14–22.
- Lee, J. W. Y., Kim, B., & Kim, M. S. (2011, March). *Creating the intercultural learning narrative using social network sites status updates: An innovative approach in using social media*. Paper presented at the Global Learn 2011, Melbourne. Available at <http://www.editlib.org/p/37407>.
- Liu, M., Kalk, D., Kinney, L., & Orr, G. (2012). Web 2.0 and its use in higher education from 2007–2009: A review of literature. *International Journal on E-Learning*, 11(2), 153–179.
- Madge, C., Meek, J., Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university: “It is more for socialising and talking to friends about work than for actually doing work.” *Learning, Media and Technology*, 34(2), 141–155.
- Miller, S. M., & Miller, K. L. (2000). Theoretical and practical considerations in the design of Web-based instruction. In B. Abbey (Ed.), *Instructional and cognitive impacts of Web-based education* (pp. 156–177). Hershey, PA: Idea Group Publishing.
- Moon, J. (2004). *A handbook of reflective and experiential learning: Theory and practice*. London: RoutledgeFalmer.
- Nettleton, S., Lowe, D., & Dorahy, R. (2008, June). *Using e-portfolios to integrate reflective practice with experiential learning in engineering teaching and learning*. Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications 2008, Vienna. Available at <http://www.editlib.org/p/29046>.
- Pollara, P., & Zhu, J. (2011, March). *Social networking and education: Using Facebook as an edusocial space*. Paper presented at the Society for Information Technology & Teacher Education International Conference 2011, Nashville. Available at <http://www.editlib.org/p/36833>.
- Pritchard, A., & Woollard, J. (2010). *Psychology for the classroom: Constructivism and social learning*. London: Routledge.
- Ryberg, T., & Wentzer, H. (2011). Case Study Ekademia: A learning environment using Elgg social software. In Kear, K. (Ed.). *Online and social networking communities* (pp. 38–41). New York: Routledge.
- Sato, S., & Kageto, M. (2011a, June). *PISION: A system to visualize blogs and forums*. Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications 2011, Lisbon. Available at <http://www.editlib.org/p/38023>.
- Sato, S., & Kageto, M. (2011b). Utilization of the Web to make use of students’ communities in social media for project-based learning. *Online Proceedings of the 9th International Conference for Media in Education 2011*.
- Sato, S., & Kageto, M. (2010). Practice of promoting reflection in problem-based learning by using Social media and its viewer. In *Proceedings of the World Conference on Educational Multimedia, Hypermedia and Telecommunications 2010, Toronto, Canada* (pp. 3481–3489). Chesapeake, VA: Association for the Advancement of Computing in Education.
- Sawyer, R. K. (Ed.), (2006). *The Cambridge handbook of the learning sciences*. Cambridge: Cambridge University Press.
- Scardamalia, M., Bereiter, C., & Lamon, M. (1994) The CSILE project: Trying to bring the classroom into world 3. In K. McGilly (Ed.), *Classroom lessons: Integrating cognitive theory and classroom practice* (pp. 201–228). Cambridge, MA: The MIT Press.
- Selwyn, N. (2009). Faceworking: Exploring students’ education-related use of Facebook. *Learning, Media and Technology*, 34(2), 157–174.