

# A Systematic Appropriation of Social Technologies for Educational Activities: Empirical Study of Australian Lecturers

Suraya Hamid

*Department of Computing and Information Systems, The University of Melbourne, Carlton, VIC, Australia.,  
s.hamid@student.unimelb.edu.au*

Shanton Chang

*Department of Computing and Information Systems, The University of Melbourne, Carlton, VIC, Australia.,  
shanton.chang@unimelb.edu.au*

Jenny Waycott

*Department of Computing and Information Systems, The University of Melbourne, Carlton, VIC, Australia.,  
jwaycott@unimelb.edu.au*

Sherah Kurnia

*Department of Computing and Information Systems, The University of Melbourne, Carlton, VIC, Australia.,  
sherahk@unimelb.edu.au*

Follow this and additional works at: <http://aisel.aisnet.org/amcis2012>

---

## Recommended Citation

Hamid, Suraya; Chang, Shanton; Waycott, Jenny; and Kurnia, Sherah, "A Systematic Appropriation of Social Technologies for Educational Activities: Empirical Study of Australian Lecturers" (2012). *AMCIS 2012 Proceedings*. 17.  
<http://aisel.aisnet.org/amcis2012/proceedings/ISEducation/17>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2012 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# A Systematic Appropriation of Social Technologies for Educational Activities: Empirical Study of Australian Lecturers

**Suraya Hamid**

University of Malaya/University of Melbourne  
s.hamid@student.unimelb.edu.au

**Shanton Chang**

University of Melbourne  
shanton.chang@unimelb.edu.au

**Jenny Waycott**

University of Melbourne  
jwaycott@unimelb.edu.au

**Sherah Kurnia**

University of Melbourne  
sherahk@unimelb.edu.au

## ABSTRACT

The use of Online Social Networking (OSN) for teaching and learning is a phenomenon observed in many countries today. However, how academics use and appropriate social technologies in higher education is still not well understood. In particular, the systematic appropriation processes of the social technologies have not been discussed much in the literature. This paper offers an empirical study concerning the way lecturers appropriate social technologies based on interviews with fourteen lecturers in seven Australian universities. The findings discovered two appropriation approaches, namely systematic-procedural and non-systematic-ad hoc process. There are also two key reasons for using social technologies: as content for the course, and as the core teaching and learning tool. Further, for student learning, the social technologies are used either as a medium for coursework or for supporting informal communication. This research provides new insights into a methodological and systematic appropriation of social technologies from which higher education may benefit.

## Keywords

Social technologies appropriation, Online Social Networking (OSN), higher education, empirical study,

## INTRODUCTION

In recent years, the emergence of social technologies appropriated for educational use in higher education is growing significantly (Land & Bayne, 2008; Ajjan & Hartshorne, 2008; Hemmi, Bayne, & Land, 2009; Dale & Pymm, 2009). It is mentioned in Beer (2008, p. 516) that there is a 'burgeoning academic interest in this phenomenon'. The phenomenon pointed out in Beer's argument is the use of social technologies in higher education. In this paper, we refer to the phenomenon as the use of Online Social Networking (OSN) for teaching and learning. OSN in this paper is defined as a range of activities enabled by social technologies and operationalised by a group of people (Hamid, Chang & Kurnia, 2009). Social technologies include some of Web 1.0 and Web 2.0 technologies such as instant messaging, online discussion boards, blogs, microblogs, wikis, social networking sites, social bookmarking sites, podcasts, photo sharing, and video sharing. The common educational activities students and lecturers can perform using social technologies include content generating, sharing, interacting and collaboratively socializing (Hamid et al, 2010).

The appropriation of these social technologies has enabled both lecturers and students to deliver teaching and receive learning respectively, easily and in a fun way. For example, Minocha and Thomas (2007) claim that the use of Wiki for collaborative learning and to support information sharing and interaction between members of a group is very ideal especially in the educational environments. Hamid et al (2010) investigate the potential benefits of conducting empirical research into how and why lecturers use social technologies in teaching and learning. While the topic of OSN use in higher education is emerging in both education-related and IS-related conferences and publications, there is still a lack of understanding based on empirical data to explain how lecturers are appropriating social technologies for OSN activities to support teaching and

learning. Therefore in this paper we address the research question: “*How do the lecturers appropriate social technologies for OSN educational activities?*” This paper attempts to address the gap by offering the data based on exploratory research that involved interviews with fourteen lecturers in Victorian universities in Australia from October 2010 until early 2011.

The remainder of the paper is organized as follows. First, a brief literature review on the concept of appropriation is given together with the global phenomenon of social technologies appropriation. The methodology used in undertaking the research is then presented. The findings are then reported before the paper concludes with some key observations.

## **SOCIAL TECHNOLOGIES APPROPRIATION**

In principle, social technologies enable their users to socialize and create networks or communities online. Social technologies are originally meant for social and non-educational purposes. However, they are now being used and appropriated to deliver teaching and learning in higher education (Hemmi, Bayne & Land, 2009). There are several views on what appropriation means in the context of using new technologies. For instance, Degele (1997) argued that the concept of appropriation comes from creativity where the users create new ways of using tools, different from what the developers and managers originally designed and developed the software or application for. Orlikowski (2000) conceptualised appropriation as ‘technologies-in-practice’, particularly in the context of IT use in organizations. In her work, Waycott (2004) examined appropriation as the integration of new tools into user’s activities, while Hemmi et al (2009) used the term appropriation to describe the use of social technologies in the educational discipline. In categorising appropriation, Jones and Twidale (2005) suggested for two categories of appropriation: serendipitous appropriation which includes the uses that arise out of spontaneous creativity, and goal-oriented appropriation, where a user finds a technology that can help him or her satisfy a need or aid in attaining a specific, defined goal. In an earlier research, Hamid et al (2011) investigated the appropriation of social technologies in two Malaysian universities. Their first case study indicated a very systematic approach of social technologies appropriation while the second case appeared to have no clear appropriation approach used. In their study, the authors argue that there is no common method in the extant literature on how lecturers should actually use and appropriate social technologies in the context of higher education (Hamid et al, 2011).

Other notable prior works on appropriation are those of Kennedy et al’s (2009) who studied the general use of information technologies by university students; and Hemmi et al’s (2009) who studied the use of social technologies. Both articles suggested that the appropriation of social technologies is not an easy and straightforward process. As higher education deals with a new generation of students who are perceived to be familiar with OSN and social technologies, the literature has shown evidence of some efforts made to use these technologies to support educational activities with a certain degree of success. However, the process of appropriation of social technologies is not well researched and can be considered a big gap in this research space.

Having appropriated the social technologies, lecturers generally designed their teaching and learning activities around at least four categories of OSN educational activities. These are content generating, sharing, interacting, and collaboratively socializing (Hamid et al, 2010). Most social technologies allow users to easily create their own content and also to actively share information, opinions and support across networks of users. For example, students can write entries in blogs or wikis or record an audio file for a podcast lecture series (Kaplan & Haenlein, 2010; Hemmi et al., 2009; Kane & Fichman, 2009; Ras & Rech, 2009). Generating content can also involve creatively producing multimedia content for posting on file sharing sites such as YouTube (Anderson, 2007; Sandars & Schroter, 2007). Using social technologies, students are easily able to publish their work and ideas in a public space for others to view and download. For instance, multimedia files can be shared on file sharing websites such as Flickr, YouTube or Slideshare, and social bookmarking sites allow users to bookmark certain websites or tag keywords for users with similar interests to peruse (Andreas et al, 2010; Murray, 2008; Ras & Rech, 2009). Sharing content and information using social technologies can mean much more than just publishing them online. It may involve further improvement and enrichment to the content and information being shared. For instance, someone else might expand the contents by putting more facts and figures or correcting erroneous data such as on Wikipedia.

Social technologies support interactions among students by allowing them to actively participate in a discussion. They can leave comments on a blog or discussion board and ask for more detailed explanations, adding someone as a friend and initiating communication by leaving a message (Kaplan & Haenlein, 2010; Hemmi et al., 2009; Munoz & Towner, 2009). In addition, interaction can involve responding to others’ blog postings, co-writing wiki entries to enrich content on a selected topic, and joining a group on social networking sites (Kaplan & Haenlein, 2010; Kane & Fichman, 2009). Students can work collaboratively in an online social environment to solve certain issues or problems with their peers, or to organise social events (Kaplan & Haenlein, 2010, Hemmi et al., 2009; Kane & Fichman, 2009; Munoz & Towner, 2009). By collaboratively socializing also, students can establish and actively communicate with the contacts made online, with the aim of working towards particular outcomes or producing deliverables, in both online and offline modes (Lockyer & Patterson, 2008).

## RESEARCH METHODOLOGY

This section explains the process we used to collect, code, and analyze the data from the interviews on how lecturers appropriate social technologies for OSN educational activities. The research was conducted using a qualitative approach and is exploratory in nature as it is appropriate for exploring contemporary phenomena (Yin, 2003). Using interviews as the data collection technique, researchers gather rich depictions of the social context of the studied phenomena, resulting in rich and insightful information (Yin, 1994).

### Research Setting and Data Collection

This research took place in seven universities across Victoria, Australia involving fourteen lecturers. The data collection was conducted from October 2010 until early 2011. Potential participants were identified based on personal contacts, or through their university's websites. The final selection of the participants to be involved was then based on their use of social technologies after they responded to an initial invitation. Interview was chosen as the data collection method because it provided the researcher with the opportunity to collect rich data that revealed lecturers' practices in appropriating social technologies for delivering teaching and learning. As per Bryman and Bell (2007), we opted for semi-structured interviews as it offers flexibility where the interviewer "picks up on things said by interviewees" and "the interviewee has a great deal of leeway in how to reply" (p.474). This approach also allowed person-to-person interaction where we were able to alter the line of questioning depending on the answers and discussion. Specifically, the participants were asked about the process they used to identify and appropriate social technologies as well as the challenges they faced during their appropriation process. Appendix 1 provides sample of the interview questions related to the lecturers' social technology appropriation. The duration of interviews was between 40 minutes to one hour. The interviews were audio taped and transcribed.

### Data Analysis

The data were analyzed manually using thematic analysis (Boyatzis, 1998). All interview transcripts were printed, read multiple times, and notes were recorded in the margins to identify potential themes. These were then collated, reviewed, and examined for connections and redundancies. Over time, the themes were expanded, contrasted and changed. For this current work, the main focus is on the appropriation process of social technologies. To mitigate potential subjectivity bias and provide triangulation, the data analysis was reviewed by multiple researchers involved in this study. As the participants are all being safeguarded through ethical considerations, they are quoted anonymously and each of them has been given a unique code that we use to identify them. For example, the first research participant will be given an ID [A01]. The demographic information of the research participants and the social technologies used is shown in Table 1 below. There are six male and eight female lecturers aged 30 and above from a range of disciplines. Thirteen claimed to be 'above average' in terms of their competency in using various social technologies and only one claimed to have an average competency level.

ID	Gender	Discipline	Age range	ST Competency	Social Technologies Used
A01	M	Medical Science	Above 45	Above average	Wiki
A02	F	Media and Communication	Above 45	Above average	Blogs & SecondLife
A03	F	Education/Media	36 - 45	Above average	Blog & Online Discussion Forum
A04	F	Education/Media	36 - 45	Above average	Online Discussion Forum
A05	F	Social Science & Art	25-35	Above average	Bebo & Blog
A06	M	Social Science & Art	Above 45	Above average	RenRen & SecondLife
A07	M	Social Science & Art	25-35	Above average	Blog
A08	F	Media and Communication	25-35	Above average	Flickr
A09	M	Business & IT	Above 45	Above average	Blog, Wiki, RSS, Microblogging (Twitter), Google Wave
A10	M	Social Science & Art	25-35	Above average	Wiki & Online Discussion Forum
A11	F	Business & IT	Above 45	Above average	Skype, Moodle, Wiki Podcasting/Vidcasting SecondLife, Blog, SlideShare
A12	F	Education & IT	35-45	Above average	Skype & Podcast
A13	M	Education & IT	Above 45	Above average	Blog & Wiki
A14	F	Business & IT	Above 45	Average	Online Discussion Forum

**Table 1: Demographic Information of Participants and the Social Technologies Used**

## FINDINGS

The findings provide us with some insights that can be used to frame our understanding on how lecturers appropriate social technologies. From the data collected, we discovered two appropriation approaches: (a) systematic-procedural approach and, (b) non-systematic-ad hoc approach. The systematic-procedural approach indicates the systematic steps taken by the lecturers in planning, implementing and monitoring and assessing the students' progress in a procedural manner. The non-systematic-ad hoc approach lacks of systematic and clear process towards using OSN in the classroom. From fourteen lecturers interviewed, thirteen can be categorised as using the systematic-procedural approach and the remaining one is using the non-systematic-ad hoc approach. Additionally, the findings also show two key reasons for using social technologies: (a) as content to the course, and (b) using social technologies as the core teaching and learning tool. The following sub-sections discuss the approaches to social technologies appropriation.

### Systematic-Procedural Approach

It can be identified that in the systematic and methodological approach, lecturers generally follow a series of distinct steps in their appropriation of social technologies for OSN. While the lecturers themselves did not really mention clear steps, based on our analysis, these lecturers actually follow a systematic process in appropriating social technologies. It generally starts with the planning process where activities involved in appropriating social technologies before the semester resumes take place. This can be categorised as the planning stage.

#### Planning

In this process, the lecturer would identify the social technologies and OSN activities that they consider useful and beneficial in achieving the course objectives. In the identification of the right social technologies, the learning outcomes planned for course can be considered as the main reason driving the OSN adoption.

*"In terms of specific steps, I guess I look at what I want to achieve pedagogically first, then try to match that with whatever OSNs or other platforms there are out there in cyberspace. I also have to consider what the activities will bring to the learning experience that students are not already getting."* [A06]

*"Another factor in my planning process was attending conferences and workshops to view firsthand how others in the field were using OSN and other forms of computer mediated communication (CMC) in language teaching and other areas of education."* [A05]

Lecturers also considered how well the social technologies are aligned with social constructivist learning theory and the educational pedagogy. Social constructivist theory contends that students construct their own knowledge more effectively when they are given a set of tools and they are working on the knowledge construction in a group setting. Then, the lecturers would do a simple mapping of the features of the social technologies with the subject chosen, particularly the possible features that could be leveraged in supporting the classroom experience. For example, if the lecturer is choosing WordPress over Blogspot for blogging the class experience, the features of WordPress which is more suitable and fitting the course's activities over Blogspot's features may be identified. Interviewees did not identify any assessment systems. However, it could be assumed that having some kind of checklist together with some assessment criteria could provide stronger justifications for choosing the identified social technology.

Before the semester starts, the lecturers would design the OSN activities that they consider useful for students to achieve the learning outcome. The OSN activities could include those categorised under content generating, sharing, interacting, and collaboratively socializing.

For example, for content generating, the use of blogs to write topic reflections or to write entries on topics relevant to the course is designed. In another example, if the lecturer would like to see the students to collaboratively socialize, the use of social networking sites such as Bebo is designed in which the students would be given a problem and they need to collaborate using the social networking tools to solve the problem. In the Bebo-supported OSN activities, the students are required to work together to find the solution to the assignment question given by the lecturer. Here, the elements of content generating, sharing and interacting are integrated in the same activity.

*"There are two aspects to that (designing). One aspect is I look maybe the contents, the topics and key issues within the course I will be teaching and maybe match up technology that I think could illustrate that particular concept ... the pedagogy driving the technology use."* [A12]

*"No, the pedagogical philosophies and theories reflected in the blog task are implicit ones from my own experience as a teacher, rather than any formal pedagogy."* [A07]

In addition, the lecturers usually consider the existence of support when they plan to implement the use of OSN when the semester starts. The support here includes the technical assistance given by the IT Unit and the availability of tutors to help manage the class if the class size is more than 100 students. Some lecturers also look at the opportunities to work with others beyond the university boundary. By doing this, additional support could be accessed and secured. For instance, if another university is known to offer equivalent course, students from different universities or campuses could learn together using the same OSN platform.

*“One good reason we use Wiki is because as a multi-campus institution, we have one subject which is offered on two campuses. Like some fifty students in Campus A and another thirty students in Campus B. Wiki allows the lecturers who want to make students across campus to work in an inter-campus group works. Wiki is a good solution for that.” [A13]*

*“What I’ve been doing is concentrating on extension of Blackboard. So I work with the educational media group at the university and, they help me to develop the wiki, which would enhance educational activities.” [A10]*

*“I implemented social networking as a way to create a “community” within a very large unit (150–300 students), and in order to give students an opportunity to use the target language outside of the classroom in authentic interactions.” [A05]*

#### **Implementation and Continuous Monitoring**

The second step involves the implementation and the continuous monitoring throughout the university semester. Typically, during the first contact hours (the first lecture is normally done on a face-to-face basis in a lecture hall), the lecturer would introduce the course to the students. They then would explain the requirements of the course, the course expectations as well as the learning objectives. The use of social technologies (either using a single social technology, or various social technologies throughout the semester) would be elaborated. The students would be given the opportunity to ask questions. Further to that, lecturers would also demonstrate how the students should use the social technology(ies) for the OSN activities planned for the course.

This is normally amplified through laboratory demonstrations to ensure the students know what is expected from them when they are using the OSN. The implementation of OSN, as it is aligned to the spirit of social constructivist theory, requires students to become the focus of the teaching and learning activities. Thus, throughout the OSN activities, the student-centered approach is always applied and emphasized.

*“The Renren.com activities are also similarly based on constructivist principles where students take the lead in their own learning based on a range of topics and guidelines provided for them and are encouraged/pushed to support each other”. [A06]*

*“We are guided generally by the constructivist principles and self-directed learning. Students are expected to be developing an attitude to life-long learning partly through exploration of these tools.” [A02]*

Throughout the semester, the students are using OSN activities to achieve their learning goals, as prescribed earlier in the first semester. The OSN activities again revolve around the four activities: content generating, sharing, interacting and collaboratively socializing.

In the monitoring of OSN activities by the students, the lecturers also emphasise the importance of having constant communication among students, as well as with the lecturers. The dimensions of communications include those of the frequency of communication expected (ranging from once a week to three to five times a week) in order for the students to engage with the course and to be in constant interaction with their peers. For submission of OSN activities, the timeliness of submissions are also given priority.

*“I regularly monitored the blogs and left comments on students’ blogs. I tried to leave at least one comment on each student’s blog every few weeks, so they know I was paying attention to their contributions.” [A07]*

#### **Assessment**

For the assessment process, evaluation of students’ work based on their performed OSN activities can be carried out either throughout the semester, or it can be done once at the end of the semester. Nevertheless, the importance of having a rubric is a common idea mentioned by most of the lecturers who are systematically using OSN for their classroom teaching. The rubric contains the week-by-week activities, the assessment associated for the week(s), how the assessment would be evaluated in detail as well as how the marks would be allocated, according to the quality of the submission, and how the submissions fulfill the requirements stated in the rubric.

Some lecturers meticulously carry out the assessment on a weekly basis. They would look at the forums or the blog entries of the students in order to see whether their students are really working on their assignment or not. While it was time

consuming, for classrooms with less than 20 students, constant evaluation of students' interaction and engagement could be done easily. However, once the classroom size reaches more than 50 students, it would be very time consuming and difficult for the lecturers to manage as well as to assess their students' performance in proper detail. Thus, by having tutors on hand when the class size is bigger than 50 is recommended especially when OSN is deployed for the classroom.

*"My course assessment is not solely on interaction but on other criteria. They are stated in the course rubric. However there is a week where we get students to form a peer review and mark each other's wikis. We give them five percent of the overall mark for the quality of their comments on another people's wikis." [A01]*

*"We expect the students to make at least one post per week each (during Week 3 to Week 12) and to leave two to three comments on other students' blogs per week. Students who do substantially less than this will not receive high marks and students who do less than five blog posts are very more likely to fail. Blogs which show evidence of continuous and steady efforts throughout the semester will be rewarded with better marks, while those which are not updated regularly will be penalized or risked being failed. I typically notice a flurry of entries in the final week but these inconsistent blogging behavior is not accepted, at least by me." [A07]*

*"Basically there's no surprises. I provide them with the assessment criteria with the blogging tasks. It is not just the blog or whatever you like .. there is a set criteria." [A04]*

The lecturers frequently asked for their students to give them feedback. This can be done throughout the semester by collecting students' feedback by asking the students their feelings and experiences throughout the course. This approach is advisable as issues could be resolved earlier and precautions can be taken to ensure the issues would not relapse in the subsequent weeks for the remainder of the semester. For example, one of the lecturers discovered his student was using software to "compile" all the blog entries of his peers and make them available as an RSS feed to be read on an RSS client reader. While this act can be considered as unexpected and deserving recognition (due to good initiative), it is also considered to be non-ethical as the consent of the peers was not sought prior to the feeding of the entries into the RSS "feeds". By knowing this earlier through students' feedback, the issue was able to be resolved in amicable nature and the RSS feeding was stopped.

*"I certainly found some of the things I was concerned about. I haven't expected like a student who decided it is a good idea to create a Twitter feed from all fellow students' blogs and put it in RSS and tweet it .. feed into Twitter and feed into Internet .. He thought he can do it, which is good .. but he hadn't thought of privacy and its implications. So that's to me is quite unexpected. So I re-evaluate how should I lock it more securely within the network only or something like put more in Blackboard blogs or anything so long it is not on public space." [A09]*

In most instances however, feedback is only gathered at the end of the semester via survey conducted by the lecturers, either through online survey or manual survey on the effectiveness of the OSN use for the classroom. The limitation of having feedback at the end of the semester is that the current semester's students would not be able to experience improvement made for them in their use of OSN. The benefits arguably would only be experienced by the next cohort of students, if the lecturers decide to integrate the positive feedbacks from their previous semesters' batch of students.

*"In the beginning, probably about 20% of the students were reluctant to use the learning activities using social technologies. They don't think they can do it and worry to do it. And the benefits of group project is there is people within group who are happy to do it .. so I had you know the typical of group dynamics happening." [A11]*

Pertaining to whether the students successfully use the appropriated social technologies as intended, the evidence provided by the lecturers showed an interesting input. For example, one of the lecturers claimed that while assessment is a good way to measure the students' level of understanding with the course, what more meaningful to him is that the students could carry on successfully in life using the skills and knowledge learnt from their OSN experience.

*"The social technology does not really matter. What more important is that the technology enables the students to use their knowledge and skills in a practical and meaningful way and to learn beyond the boundaries of what we were doing in class. We just provide the students with the basic exposure to these technologies but eventually, for anything that we do, we try to set students up with skills and knowledge that will free them from us as lecturers and empower them to go on learning and using their skill independently after they finish out course. By having the knowledge, we hope that they would have a life-long avenue for learning and using the skills they got from us." [A06]*

The same lecturer offered his view on successful appropriation. Based on his experience, interactions form a part of his course assessment. However, the expectation is only around the establishment of interaction between students with the teaching staff and artefacts within the learning environment. Yet, the lecturer observed a pattern of off-task interactions as

well where the students seem to interact in quite constructive ways and support each other in finishing the set task. It is also common for the lecturer to see students taking on mentor roles where they teach other students how to do certain things or overcome certain problems. To this, he said

*“Some students were very active, interacting both among themselves and with users external to the course. Their interaction was very positive and they tended to encourage each other quite a bit.” [A06]*

Another lecturer mentioned an example of the ability of students to reevaluate their initial responses in the social technologies. The social technology used, Bebo allows the students to revisit and make an amendment and therefore, indicated an actual learning process had indeed taken place and kept in a common place for other students to learn from her experience.

*“One of the students use Bebo’s whiteboard display to write a Chinese character for her assignment. But we noticed there was a mistake in one of the strokes of the character. About five days later, we saw the student came back to revise her drawing, highlighting the part where she previously made a mistake and demonstrating the correct way of writing it. Thus, not only are these kind of drawings useful for the student writing them, but the social technologies allow these tips and tricks can be easily seen by other students too.” [A05]*

### **Non-Systematic-Ad Hoc Approach**

There was also evidence of non-systematic-ad hoc approach of OSN appropriation. In this approach, lecturers typically have no systematic planning, implementation and monitoring as well as proper assessment.

Among the reasons given by the lecturers who have not adopted the systematic-procedural approach is because the complexity of the course for having a prescribed ways of OSN adoption. Other reasons include lack of knowledge of proper OSN appropriation; to provide rooms for students be creative; and also it is time consuming to do so.

*“I think there should be a framework for using OSN. At the moment, there is a lot of ad-hoc development (in terms of OSN use) and people don’t know what others are doing and they even don’t really know whether what they are doing are appropriate or otherwise. Because of this, they need to spend more time learning and adapting to their real needs.” [A11]*

A summary of the appropriation approaches undertaken by the lecturers is depicted in Table 2 below. The summary table can also be seen as a preliminary framework towards understanding a proper and systematic way of appropriating social technologies for teaching and learning in higher education.

<b>Approach/Stage</b>	<b>Systematic-Procedural</b>	<b>Non-Systematic-Ad Hoc</b>
<b>Planning</b>	• Identification of ST and OSN activities	• Lack of identification process of ST and OSN activities
	• Plan the learning outcomes (goal-oriented)	• Lack of the learning outcomes planning (non-goal oriented)
	• Consideration of the ST’s alignment with social constructivist learning theory and the educational pedagogy.	• Lack of alignment consideration between ST with social constructivist learning theory and the educational pedagogy
	• Consider the existence of ST support	• Lack of ST support consideration
	• Design the OSN activities	• Lack of design of OSN activities
<b>Implementation and Continuous Monitoring</b>	• Introduce the course and highlight the use of ST to facilitate OSN activities	• Introduce the course but not properly highlight the use of ST to facilitate OSN activities
	• Explain course requirement and how ST will be used to support OSN activities	• Explain course requirement but not on how ST will be used for OSN activities
	• Continuous use of the ST throughout the semester for OSN activities	• Continuous use of the ST throughout the semester for OSN activities
	• Constant monitoring of students’ progress and their use of ST	• Lack of constant monitoring of students’ progress and their use of ST
	• Frequent communication with students on how best to leverage and effectively use ST for OSN activities	• Infrequent communication with students on how best to leverage and effectively use ST for OSN activities



<b>Assessment</b>	<ul style="list-style-type: none"> <li>• Assessment centered around students' OSN activities</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment is not centered around students' OSN activities</li> </ul>
	<ul style="list-style-type: none"> <li>• Assessment of students' OSN activities is based on rubric made known to the students</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of students' OSN activities is generally not based on rubric</li> </ul>
	<ul style="list-style-type: none"> <li>• Students' feedbacks on their use of OSN activities are collected, analyzed and acted upon</li> </ul>	<ul style="list-style-type: none"> <li>• Students' feedbacks were not sought, analyzed or acted upon</li> </ul>

**Table 2: Summary of Social Technologies Appropriation Approaches**

From the study, we argue that the use of OSN from a systematic-procedural approach has more benefits compared to a non-systematic-ad hoc implementation. Thus, the use of OSN should be well planned in order for the lecturers and students to see the real benefits. While this section deals with the appropriation process of OSN, the findings also presented us with the information on the key reasons of social technology appropriation.

**Key Reasons of the Social Technologies Appropriation**

The analysis of our interview transcripts suggest there were two main ways that social technologies were used to support teaching. In some cases, OSN was used as the content for the course. In other cases, it was used as the core teaching tool. By referring to Table 3 below, in our interviews, [A09] used the OSN as the course content in the context of the use of social technologies in library sciences, whereas [A11] introduces social technologies in the course related to emerging technologies and their applications in a business setting. The second reason is when social technologies are used as the core teaching tool. In this model, which is adopted by most interviewees (except for A09 and A11), social technologies are used in the classrooms not as the course content but as a platform for delivering teaching itself. For example, lecturer [A06] uses RenRen and SecondLife to teach Mandarin to his students.

As for the learning elements, all of the interviewed lecturers asked their students to use the social technologies as a medium to carry out their assignments. For instance, [A05] requested the students to provide their reflections pertaining to the course topic (Japanese language) using blog while at the same time update their Bebo site with the other assignments also related to the course. This is done as a further reinforcement to the studied topics in the classroom. For the interviewee [A09] who taught a subject related Photography, the use of Flickr is seen to capture students' creativity and enthusiasm for using photo sharing platform such as Flickr. It also offers a unique and effective model of student-centered learning. From her observations, the students are motivated to reflect, analyze and critique their work and the work of the peers and hence, the use of Flickr in her case enhanced the overall effectiveness towards learning visual literacy and technical skills. Further, some of the lecturers used the same social technologies for establishing and maintaining informal communications with the students. For example, A03 claimed to use blog and online discussion forum to maintain informal communication while at the same time using the same tools as her core teaching tools. In a couple of instances ([A11] and [A12]), lecturers also maintained informal communications with the students via Skype, which was considered as a social communication and collaboration tool.

<b>Participant ID</b>	<b>Teaching Elements</b>		<b>Learning Elements</b>	
	<b>As content to the course</b>	<b>As a core teaching tool</b>	<b>As a medium for assignment</b>	<b>As informal communication tool</b>
A01	-	Wiki	Wiki	-
A02	-	Blog & SecondLife	Blog & SecondLife	-
A03	-	Blog & Online Discussion Forum (ODF)	Blog & ODF	Blog & ODF
A04	-	ODF	ODF	ODF
A05	-	Bebo & Blog	Bebo & Blog	Bebo/Email
A06	-	RenRen & SecondLife	RenRen & SecondLife	SecondLife
A07	-	Blog	Blog	-
A08	-	Flickr	-	-
A09	Blog, Wiki, RSS,	Blog, Wiki, RSS,	Blog, Wiki, RSS,	-

	Microblogging (Twitter), Google Wave	Microblogging (Twitter), Google Wave	Microblogging (Twitter), Google Wave	
A10	-	Wiki & Online Discussion Forum	Wiki & Online Discussion Forum	-
A11	Skype, Moodle, Wiki Pod/video casting SecondLife, Blog, Slide share	Skype, Moodle, Wiki Pod/video casting SecondLife, Blog, Slide share	Skype, Moodle, Wiki Pod/video casting SecondLife, Blog, Slide share	Skype
A12	-	Podcasting	Podcasting	Skype
A13	-	Blog & Wiki	Blog & Wiki	-
A14	-	ODF	ODF	ODF

**Table 3: Reasons for Social Technologies Appropriation**

## DISCUSSION AND CONCLUSION

We contribute towards elucidating an abstract process of social technologies appropriation not covered in previous research on OSN use in higher education. The findings presented in this research generally support the works of Hamid et al (2011) and Hemmi et al (2009). In an earlier paper (Hamid et al, 2011) we described two cases of social technology appropriation by Malaysian lecturers. In that study, one lecturer uses a systematic approach to appropriation, while the other adopted a more ad hoc non-systematic approach. In contrast, Hemmi et al (2009) described the appropriation of social technologies from the angle of students' experiences while using technologies such as blogs, wikis, SecondLife, and social bookmarking sites. However, in their investigation, focus was not given to the lecturers' appropriation process of social technologies.

This study offered an explanation towards understanding the appropriation model based on investigation conducted across various disciplines of study such as arts, media studies, business, education, ICT to health sciences. From our research, social technologies can also be integrated either as content to the course, as core teaching tool, as a medium for assignment and also as a medium for supporting informal communications. We also add to the knowledge on goal-oriented appropriation as suggested by Jones and Twidale (2005). Using the empirical evidence, we conjecture that goal-oriented appropriation would be more industrious and effective when used alongside the systematic-procedural approach of social technologies appropriation. While the serendipitous appropriation may open up new discoveries and allow spontaneous creativity, this model of appropriation may not be as effective as compared to its goal-oriented counterpart. Furthermore, the only lecturer interviewed who can be categorized as using the non-systematic-ad hoc approach did not indicate his approach as less successful or less effective compared to those who are using the systematic-procedural approach. Thus, the measure of success is a potential area for this research to investigate in its future works.

The use of social technologies for educational purposes has arguably changed the demands and direction of higher education. More importantly, how lecturers carefully and systematically appropriate social technologies is the focus of this paper. It is interesting to note that no common method exists either in the literature or found in the field pertaining to the way social technologies are being appropriated for teaching and learning. Only through a detailed and micro-investigation such as carried out in this research are we able to discover the answer to the "how" question. In the context of this paper, our "how" question bring us closer to the knowledge and wisdom of the practitioners (i.e lecturers) into how they appropriate social technologies for delivering teaching and learning.

This research contributes to the growing body of knowledge on the use of social technologies in higher education. From the empirical evidence provided by the fourteen research participants, and by analyzing and comparing the findings to the past research, we found that social technologies appropriation has significant role to play in facilitating lecturers' delivery of teaching process and in enhancing students learning experience. Yet, a careful and proper appropriation process and integration mechanism must be established as a priori. Additionally, the social technologies appropriation approaches as discussed in the findings section and summarized in Table 2 could be regarded as a preliminary framework towards how social technologies could be appropriated in higher education. This preliminary framework would generally help lecturers who are keep to adopt social technologies but uncertain of the proper way of appropriating these emergent technologies for their teaching and learning.

The limitation of this paper is attributed to its localised context of Australian universities and the research only seeks the views of the lecturers. Thus, more cases of appropriating social technologies for teaching and learning in various universities

and in different countries would be useful to complement the findings of this study. In particular, cases that demonstrate both successful and unsuccessful appropriation of social technologies for teaching and learning would be valuable to increase our understanding about the appropriate use of social technologies in higher education. Future works could be geared towards refining the social technologies appropriation model and its integration mechanisms into a more comprehensive framework. The refined framework can then be implemented in real world setting and later tested and validated to see its effectiveness into how social technologies can be harnessed for advancing teaching and learning.

## ACKNOWLEDGMENTS

The main author thanks the Ministry of Higher Education, Malaysia and University of Malaya for sponsoring this research. Also a sincere gratitude to all research participants for their participation.

## REFERENCES

1. Ajjan, H. and Hartshorne, R. (2008) Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests, *Internet and Higher Education*, 11, 71-80.
2. Anderson, P. (2007) What is Web 2.0? Ideas, technologies and implications for education, *JISC Technology & Standards Watch*, 1-64.
3. Beer, D. (2008) Social network(ing) sites...revisiting the story so far: A response to Danah Boyd & Nicole Ellison, *Journal of Computer-Mediated Communication*, 13, 516-529.
4. Boyatzis, R. (1998) Transforming qualitative information: Thematic analysis and code development, SAGE Publications, Thousand Oaks, CA.
5. Bryman, A. and Bell, E. (2007) Business research methods, Oxford University Press, Oxford, USA.
6. Dale, C. and Pymm, J. (2009) Podagogy – the iPod as a learning technology, *Active Learning in Higher Education*, 10, 1, 84-96.
7. Degele, N. (1997) Appropriation of technology as a creative process, *Creativity and Innovation Management*, 6, 2, 89-93.
8. Hamid, S, Chang, S, and Kurnia, S. (2009) Identifying the use of Online Social Networking (OSN) in higher education, *ASCILITE 2009*, December 6-9, Auckland, New Zealand, 419-422.
9. Hamid, S., Chang, S., and Kurnia, S. (2010) Investigation of the use and benefits of Online Social Networking (OSN) in higher education, *The 8th Education and Information Systems, Technologies and Applications (EISTA)*, June 29-July 2, Orlando, Florida, USA.
10. Hamid, S., Waycott, J., Chang, S. and Kurnia, S. (2011) Appropriating Online Social Networking (OSN) activities for higher education: Two Malaysian cases, *ASCILITE 2011*, December 4-7, Hobart, Tasmania, Australia, 526-538.
11. Hemmi, A., Bayne, S., and Land, R. (2009) The appropriation and repurposing of social technologies in higher education, *Journal of Assisted Learning*, 25, 19-30.
12. Jones, M. C and Twidale, M. B. (2005) What's in a name? Exploring the connections between abstraction and appropriation, *International Reports on Socio-informatics*, 2, 2, 43-47.
13. Kane, G. C and Fichman, R. G. (2009) The shoemaker's children: Using wikis for Information Systems teaching, research and publication, *MIS Quarterly*, 33, 1, 1-17.
14. Kaplan, A.M and Haenlein, M. (2010) Users of the world, unite! The challenges and opportunities of social media, *Business Horizons*, 53, 59-68.
15. Kennedy , G, et al. (2009) Educating the Net Generation: A handbook of findings for practice and policy, Creative Commons, CA, USA.
16. Land, R. and Bayne, S. (2008) Social technologies in higher education: authorship, subjectivity and temporality, *Proceedings of the 6th International Conference on Networked Learning*, 675-681.
17. Lockyer, L. and Patterson, J. (2008) Integrating social networking technologies in education: A case study of a formal learning environment, *Eighth IEEE International Conference on Advanced Learning Technologies*, July 1-5, Cantabria, Spain, 529-533.
18. Minocha, S. and Thomas, P. G. (2007) Collaborative learning in a wiki environment: Experiences from a software engineering course, *New Review of Hypermedia and Multimedia*, 13, 2, 187-209.

19. Munoz, C. L. and Towner, T. L. (2009) Opening Facebook: How to use Facebook In the college classroom, *Proceedings of Society for Information Technology and Teacher Education Conference*, Charleston, South Carolina, USA, 1-13.
20. Murray, C. (2008) Schools and social networking: Fear or education?, *Synergy Perspectives: Local*, 6, 1, 8-12.
21. Orlikowski, W. J. (2000) Using technology and constituting structures; A practice lens for studying technology in organizations, *Organization Science*, 11, 4, 404-428.
22. Ras, E. and Rech, J. (2009) Using wikis to support the Net Generation in improving knowledge acquisition in Capstone projects, *The Journal of Systems and Software*, 82, 553-562.
23. Sandars, J. and Schroter, S. (2007) Web 2.0 technologies for undergraduate and postgraduate medical education: An online survey, *Postgraduate Medical Journal*, 83, 759-762.
24. Waycott, J. (2004) The appropriation of PDAs as learning and workplace tools: An Activity Theory perspective, PhD thesis, The Open University, United Kingdom.
25. Yin, R. K. (2003) Case study research, 3rd edn, Sage Publications, London, England.
26. Yin, R. K. (1994) Case Study Research: Design and Methods, Sage Publications, Thousand Oaks, CA

## **APPENDIX 1: SAMPLE INTERVIEW QUESTIONS**

### **A. Opening Questions**

Social technologies appropriated for teaching and learning:

- i. What are the social technologies appropriated?
- ii. Why do you choose to appropriate them?

### **B. Planning for appropriation of social technologies**

What are the processes involved in OSN activities during the following stages:

- i. Choosing the social technologies
- ii. Planning the OSN activities
- iii. Designing the OSN activities (use and alignment to any learning theories)
- iv. Monitoring the use of social technologies

### **C. The Use of OSN in Higher Education**

1. How do you interact with students during OSN activities?
2. What are the examples of how students use OSN in your subject?
3. When the students are using OSN:
  - i. What has been their feedback?
  - ii. What are their levels of use?
4. How do you assess the students' use of OSN?