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MAKING SENSE OF THE USE OF ONLINE SOCIAL NETWORKING IN HIGHER EDUCATION: AN ANALYSIS OF EMPIRICAL DATA USING ACTIVITY THEORY

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Abstract

The use of Online Social Networking (OSN) for teaching and learning is a phenomenon observed in many countries today. However, the reasons that lecturers use OSN and the explicit narrative of how they appropriate social technologies for educational uses are not well understood. This paper offers empirical evidence from the first phase of a study concerning the ways lecturers use OSN for advancing teaching and learning. Sixteen lecturers from nine Malaysian universities were interviewed in the period of July to August 2010. Lecturers were asked about their use of Social Technologies (ST) for OSN activities, the processes involved in OSN use, and the benefits and challenges of the OSN use. The empirical data were analysed using thematic analysis and then mapped to the constructs of Activity Theory, the theoretical lens used for making sense of the OSN appropriation process in this research. The preliminary findings revealed that (1) the individual characteristics of the lecturers are among the main reasons for OSN use, and (2) the process of OSN use can be quite complex and requires delicate management on the part of lecturers. Finally the paper identifies challenges and opportunities that can be associated with OSN use for advancing teaching and learning for higher education.

Keywords: Online Social Networking, Higher Education, Activity Theory, Empirical Data.

1 INTRODUCTION

In recent years, the emergence of social technologies appropriated for educational use in higher education is growing significantly (Brown, 2010, Schroeder, Minocha & Scheider, 2010; Hemmi, Bayne & Land, 2009; Ajjan & Hartshorne, 2008; Virkus, 2008). The phenomenon in this argument is the use of social technologies in higher education. Social technologies include Web 2.0 technologies such as instant messaging, online discussion boards, blogs, wikis, social bookmarking sites, podcasts, photo sharing, video sharing and social networking sites (SNS). The common educational activities students and lecturers can perform using social technologies include content generating, sharing, interacting and collaboratively socialising (Hamid, Waycott, Kurnia & Chang, 2010). These activities can be defined as Online Social Networking (OSN) in higher education, which we define as “a range of activities enabled by social technologies and operationalised by a group of people” (Hamid, Chang & Kurnia, 2009, p. 1).

The adoption of these social technologies has enabled both lecturers and students to communicate easily compared to before. Further, these tools and services can support much flexibility in the learning processes and allow for easy publication, sharing of ideas and re-use of study content, commentaries, and links to relevant resources in information environments that are managed by the teachers and learners themselves (Brown, 2010; Kaplan, & Haenlein, 2010). The use of social technologies is claimed to align well with the social constructivist theory of learning (McLoughlin & Lee, 2007). Hamid et al (2010) proposed to balance the commentaries about the potential benefits with empirical research into how and why lecturers appropriate social technologies for teaching and learning. Specifically, we proposed the use of Activity Theory (AT) to help understand how lecturers appropriate social technologies in higher education. AT is claimed as a useful meta-theory for understanding human activities as complex, socially situated phenomena (Iivari & Linger, 1999), as in the use of social technologies for OSN activities. In this research AT provides a useful framework for making sense of the complex teaching and learning activities involving lecturers and students in a socially situated phenomenon. For instance, Mazer, Murphy and Simonds (2007) raised the question of what motivates lecturers to use social technologies as opposed to other forms of communications. They noted a lack of understanding about the factors driving the use of social technologies in higher education, suggesting more research is needed to develop an understanding of how and why lecturers use social technologies to support teaching and learning.

This paper extends the theoretical framework proposed in Hamid et al (2010) by using AT constructs to examine empirical data from a study involving interviews with lecturers who use social technologies in their teaching. Themes that emerged from the data analysis were mapped to the core constructs of AT. The data analysis suggests several motivations of OSN appropriation by the lecturers. The findings also provide some examples showing how social technologies can be appropriated in order to support an effective and engaging learning experience. Therefore, this paper provides initial answers to the question of “*how and why do lecturers use OSN for education?*” posed in the earlier work of Hamid et al (2010).

The paper is organised as follows. First, it outlines OSN use in higher education. The paper then discusses the applicability of Activity Theory in researching the topic. This is followed by a description of the systematic data collection carried out in Malaysia. The data are then analysed using thematic coding and mapped to Activity Theory’s key constructs. Lastly, the paper concludes with a discussion of the significance of this research and suggestions for future research.

2 OSN USE IN HIGHER EDUCATION

Higher education these days is looking at ways to incorporate and integrate social technologies into teaching and learning. Social technologies are said to offer a number of affordances that can enhance teaching and learning (Huijter, 2008; McLoughlin & Lee, 2007). They have the potential, for example, to foster student engagement, encourage student reflection, and facilitate collaborative working (Gray, Chang & Kennedy, 2010). Social technologies offer further advantages such as the ability to aggregate information, data and ideas from different places quickly and easily and providing an online system for archiving material so that it continues to be available to students after they have left university (Armstrong & Franklin, 2008). In the same light, social technology applications allow users to easily create their own content and also to actively share information, opinion and support across networks of users. Most of this activity is social but the educational potential is increasingly being recognised. For example, podcasts can deliver educational materials in addition to music, and blogs can be used as reflective diaries and to develop online communities of practice (Sandars & Schroter, 2007).

In order to understand the use of OSN activities in higher education, we argue that it requires a systematic investigation and thorough analysis of what motivates lecturers to use OSN and how they appropriate social technologies for teaching and learning purposes. In this sense, we need to listen, understand and document the intricacies of how and why lecturers appropriate social technologies for OSN activities. This can be done by using Activity Theory's unit of analysis called activity system in further understanding this phenomenon. The following section provides a brief overview of AT and how AT can be used in this research.

3 ACTIVITY THEORY AND OSN USE

Activity Theory is a psychological theory that emerged in Russia in the 1920s based on the work of Lev Vygotsky, Leontev and Luria who sought to understand human activities as complex, socially situated phenomena (Bryant, Forte & Bruckman, 2005). The theory has been used as a perspective for investigating a wide range of human activities and because of its emphasis on artefacts, it is particularly suited to Information Systems research in general including social technologies in education (Hashim & Jones, 2007; Kuswara, Cram & Richards, 2008; Masters, 2009; Young, 2009).

The fundamental concept of AT is that awareness emerges from an individual participating in a social structure where activity incorporating the use of tools to produce objectives leads to socially valued outcomes. The AT model is represented by Engestrom (1987) in the form of a triangle with 6 constructs that he called an activity system (refer Figure 1). The subject (person) interacts with the community, rules, division of labour, and the tools in activity that is directed towards an object (or objective) and is transformed into an outcome.

In the context of OSN, AT has been used to study the use of Web 2.0 technologies to support collaborative learning. Kuswara et al (2008) found that simply making Web 2.0 tools available or even mandating their usage does not guarantee that students will use the tools for collaborative learning. Therefore, they suggested the lecturers to use AT in order to understand the activity systems of different groups of students in their appropriation of OSN. Masters (2009) employed AT to provide a detailed description of connections within a social networking group as participants worked together to achieve individual and common goals.

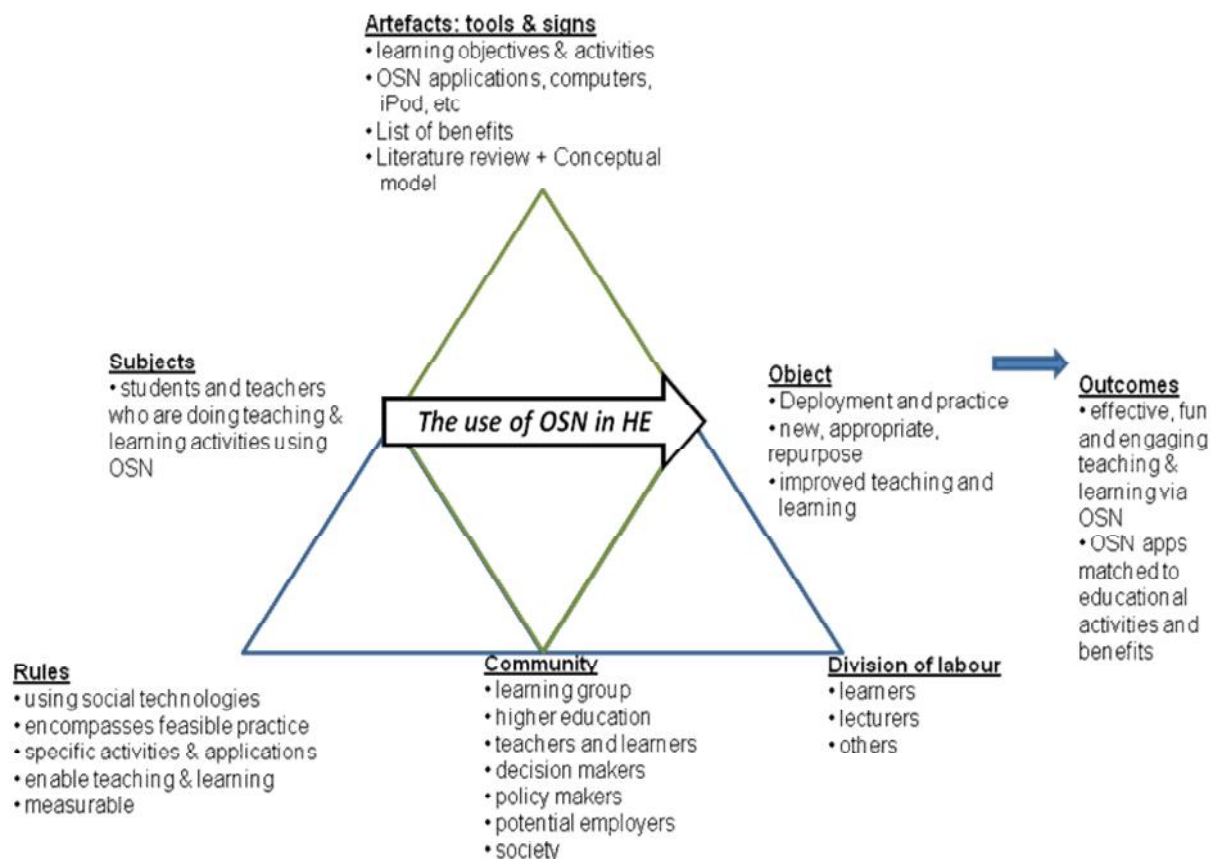


Figure 1 Conceptual Model of Activity System of OSN Use for Higher Education (Hamid et al, 2010)

4 DATA COLLECTION AND ANALYSIS

In this study, interviews were conducted with 16 lecturers in 9 Malaysian public and private universities in July and August 2010. There are two main motivations for conducting this research in the localised context of Malaysia. Firstly, the principal researcher has a better understanding of the context as her background is of Malaysian-based. Thus, understanding the culture, social values and language provide the researcher a better engagement with the research context and a deeper association with the research participants. Secondly, Malaysian higher education has started to adopt OSN on a wider scale and young Malaysians are very active users of OSN (Zakaria, Watson, & Edwards, 2010). Furthermore, Malaysian higher education landscape is set to change with the introduction of the National e-Learning Policy that recognised the emergence of Web 2.0 for supporting teaching and learning (Asia e-University, 2010). Therefore, the Malaysian context offers a good opportunity to explore the phenomenon investigated in this study.

The lecturers interviewed were identified based on their use of social technologies upon sending an initial invitation to them. They were also recruited using personal contacts and also identified through their university websites. Other than the subjects mentioned, some lecturers also used social technologies to manage students' projects and industrial training. The use of social technologies across several academic disciplines shows the versatility of social technologies for educational purposes.

The participants were emailed with an invitation to participate in the research and provided their consent. The duration of interviews were between 40 minutes to 1 hour. The interviews were audio

taped and transcribed. The study employed an interpretive paradigm (Walsham, 1995; Klein & Myers, 1999) as it was an exploratory study that aimed to understand how and why lecturers use social technologies for teaching and learning in higher education. Interview method was chosen as it provides the researcher with rich data to analyse, offering in-depth information about lecturers' perspectives with regards to using OSN for higher education. Bryman and Bell (2007) argued that the use of semi-structured interview 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 allows person-to-person interaction where the researcher will be able to alter the line of questioning depending on the answers and discussion. Specifically, the participants were asked about their awareness and personal use of social technologies. The participants were also requested to share the reasons, they use any particular social technology for OSN activities. They were also asked about the processes involved in planning and designing prior to the appropriation of social technologies for OSN activities. Lastly, participants were asked to describe the challenges and opportunities of using social technologies to support teaching and learning. The demographic information of the research participants is shown in Table 1 below.

ID	Gender	Type of University	Teaching experience	Age Range	Competency using ST	Discipline
A01	F	Public	> 15	> 45	Above average	Education
A02	F	Public	> 15	> 45	Above average	Education
A03	M	Private	10-15	25-35	Above average	Eng & IT
A04	F	Private	6-9	25-35	Average	Eng & IT
A05	F	Private	10-15	25-35	Average	Eng & IT
A06	F	Public	10-15	25-35	Average	Eng & IT
A07	F	Public	> 15	> 45	Above average	Soc Sc. & Arts
A08	M	Public	> 15	> 45	Above average	Eng & IT
A09	M	Public	6-9	25-35	Above average	Eng & IT
A10	M	Public	10-15	36 - 46	Above average	Eng & IT
A11	F	Public	> 15	> 45	Above average	Soc Sc. & Arts
A12	F	Public	> 15	> 45	Above average	Education
A13	F	Public	> 15	> 45	Above average	Education
A14	M	Public	10-15	25-35	Average	Eng & IT
A15	F	Public	< 5	< 25	Average	Eng & IT
A16	M	Public	> 15	> 45	Above average	Soc Sc. & Arts

Table 1 Demographic information of the participants

The collected data were manually analysed 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 as we analysed more transcripts. In this research, we used the core AT constructs as the main lens to analyse the different ways lecturers appropriate OSN. However, in order not to be restricted with the AT constructs and to discover findings beyond what is prescribed by AT, we also carried out an inductive coding process.

5 FINDINGS

From the initial data analysis, we were able to generate about 50 emerging sub-themes. Then the sub-themes were regrouped into smaller number of themes. Finally, the sub-themes were mapped to the constructs of AT, namely subject, tools and artefacts, rules, community, division of labour and objective. The findings from the interviews are summarised and shown in Table 2 below. The table shows the sub-themes that emerged from the data mapped to the core constructs of activity theory.

Theme (Activity Theory Constructs)	Sub-Themes (Emerging from Data)
Subject	Characteristic of the lecturers <ul style="list-style-type: none"> • Technology Savvy • Early Adopter Recognition of students' preference Roles of lecturer
Tool & Artefact	Resources Choice of Social Technologies <ul style="list-style-type: none"> • Evaluation and techniques • Functionalities • Flexibility • Convenient
Rules	Strategy Policy Pedagogical Alignments Frequency of use Timeliness Student-centred and Lecturer facilitation Assessment <ul style="list-style-type: none"> • Various methods in assessing • Reasons for assessing • Process in assessing
Community	Cohesiveness of the group includes; lecturers, students, tutors, researchers, professional, learning groups, potential employer and industrial training partner.
Objective	Process of appropriation Alignment with learning objective OSN educational activities <ul style="list-style-type: none"> • Content generating • Sharing • Interacting • Collaboratively socialising
Division of Labour	Roles of: <ul style="list-style-type: none"> • Lecturers • Tutors • Respective support units (i.e. technical unit)
Outcome	Diversifying approach and creative way Expand communication Interaction/engagement Learning benefits Increase participation for quieter students

Table 2 Mapping of Initial Findings from Thematic Coding with Activity Theory Constructs

We describe the summarised findings in more detail in the following section.

6 RESULTS AND DISCUSSION

The following illustrates the empirical results extracted from the interview transcripts and mapped to relevant AT constructs. 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, for the second research participant will be given an ID [A02] as per Table 1.

Subject

In this analysis the subject in the activity system is the lecturer who is appropriating and implementing social technologies in higher education. Our findings reveal that the lecturers' characteristics are important in driving this activity. Mohidin, Jaidi, Sang and Osman (2009) argued that there are three main characteristics lecturers should have: attitudes, communication and innovation skills in order for them to be better and effective teachers in the student-centred learning environment. These are generally different from our own findings. Our analysis of interview reveals five main characteristics of lecturers who used OSN in higher education: technology savvy, early adopter, receptiveness of young lecturer, recognition of students' technology preference and the roles of lecturer themselves as a trainer, researcher, instruction designer or other administrative tasks. One of the lecturers suggested that individual characteristics of the lecturers could determine their use of OSN activities. For example, technology-savvy lecturers are more up-to-date with new technologies and therefore, more willing to use OSN for their teaching and learning

“Social technology is the “in thing” at the moment. All of my friends are on Facebook and some are even actively tweeting. I am one of them and consider myself ‘technology-savvy’. I also see the relevance of these technologies for classroom purposes. To be at par with my students who are mostly younger generation, I am more than happy to use these new technologies with my students.” [A13]

A study by Schrum, Shelley and Miller (2008) investigated the characteristics of tech-savvy teachers. They identified a group of teachers who met the definition of tech-savvy, meaning those who were comfortable using and integrating technology in their classrooms. The vast majority (80%) was over the age of 40 and had been teaching for more than 10 years. Early adopters are lecturers who have prior experience in using and researching ST.

“I am one of the earlier adopters in this university which is due to my PhD research on Web 2.0. It is a big challenge in fact to do this. Although they are IT students, their understanding is that the social technologies are meant for personal communication.” [A10]

Some of the lecturers held other positions in their university. The sample included instructional designers, trainers, coordinators and researchers, all active users of OSN. In some cases these additional roles influenced how lecturers used OSN to support their teaching. For instance:

“As I am a trainer and also an instructional designer, I need to be proactive and well-ahead of my trainees and fellow colleagues in terms of (social) technologies adoption.” [A07]

The last characteristic we identified was lecturers' recognition of students' technology preference.

“I use Facebook and Yahoo Messenger mainly because most of my students have these accounts. These tools are user-friendly. So it is easy for students to get familiarise with the tools.” [A05]

It appears from this analysis that the characteristics of the lecturers play a role in their adoption and use of OSN in their teaching classroom.

Tools/Artefacts

The findings show that there were two types of social technologies that interviewees used (1) those used as a stand-alone application, or (2) those that were integrated with the Learning Management Systems (LMS). For example, the lecturers used blogs (i.e WordPress, Blogspot and etc), Facebook, Facebook combined with Twitter, podcast, Google Buzz, Moodle combined with discussion forum, Yahoo Messenger, Google Doc, and Wiki. Twelve out of 16 participants were using Facebook for

formal and informal activities and for interaction with students. One of the lecturers cross-referenced three social technologies seamlessly (between Facebook, Twitter and Wiki). This can be considered as a creative way of appropriating social technologies within a single course as each tool complemented each other's strengths and weaknesses.

"I cross-reference between Facebook, Twitter and Wiki. Generally how I managed my course is ... I have my current my update in my Twitter because that is the shortest form; it can only hold about 140 characters. So announcements, new articles that I found over the Internet, I would post it over the Twitter and that is the medium where student will refer and to get their discussion going on for our next class. I use Wiki because is something like e-whiteboard what students put in there are better put in Wiki." [A10]

Other than that, lecturers viewed social technologies in terms of their functionalities and flexibilities.

"I used the Facebook because of the features, many perspectives, posting and receiving messages, capability to upload video and link, those are the features important for me." [A03]

After choosing the appropriate social technology for OSN activities, lecturers can use various ways for embedding social technologies in their teaching and learning activities. Some use them independently (stand-alone social technology) whereas some of the lecturers integrate the social technologies with the university LMS.

Community

The community in this activity system includes lecturers, students, tutors, researchers, professionals, learning groups, potential employers as well as external organisations which involved with internship and other collaboration programs. Students can be conceptualised as individual students or as a group of students using OSN activities. Tutors are often involved particularly when the class size is larger and a single lecturer cannot manage the whole class. One of the lecturers we interviewed used Facebook to manage an internship programme. He claimed Facebook supported communication between students, their supervisors at site as well as the academic supervisors assigned by the university. This helped the students and supervisors in sharing information, dealing with and solving issues related to the internship.

"We have assignments, discussion boards, photos, and videos in the industrial training's Facebook page. Photos they took that are relevant to internship can be uploaded, plus sharing of videos and comments. From one of the communications, they also tell us they hope to get the professional certificate from the company at the end of their internship training." [A08]

Rules

Rules mediated the interaction between Subjects and the Community. For example, the rules state either explicitly or implicitly the regulations about how the social technologies are used, the course curriculum and how the assessment in the course will be made pertaining to OSN activities. For example, the lecturers would state the inclusion of ST use in their course syllabus before the semester started or would give briefings during the first class of the semester. Further, some lecturers allocated a certain percentage of marks for OSN activities in the coursework. The rubrics prepared allowed the lecturers and students to know the course expectations.

"From the first week of the class, I would inform the students that I would use these tools to support the teaching and learning. The students' work will be assessed through these tools as well." [A12]

The freedom of using OSN in university also depended on the university policy toward the usage of social technologies tools in universities network. For example some of the universities would allow the use of Facebook only after office hours.

“I have this policy of blocking and I heard they are permanently banning ... they only ban it during normal office hours except during break and after office hours. Fortunately my class start half way between the end of the day which is about 4pm ... until about 7-8 o'clock ... half of the time I cannot use ... later on I can use it.” [A10]

Division of Labour

Other than lecturers, tutors are the main persons who take responsibility in facilitating OSN activities. In bigger classes, there would normally be more than one tutor to manage and control the OSN activities.

“Google Site becomes the students’ own learning space...the class size is about 75 students. They are at the stage where they are inviting us to go in ... they invite all their lecturers and tutors so we can become collaborators and so we can (give our) comment. ” [A07]

However for some cases there are lecturers who need help from support unit about running their OSN activities in term of technical support or pedagogical aspect from the respective unit of the university. It is also found that the student-centered learning approach facilitated by OSN, students are given more responsibility for managing their own learning process.

Objective

For our analysis, the objective (interchangeably used with “object” in the AT jargon) or issue at hand is the appropriation and use of social technologies for OSN activities. The capabilities and affordances of social technologies enable these applications to be appropriated for other uses, including for supporting learning in higher education.

To get students to use ST for OSN activities, one of the most important responsibilities of the lecturer is to evaluate the social technologies before the tools are introduced into the classroom. The evaluation techniques used by the lecturers we interviewed varied. One of the lecturers described a systematic way of evaluating the technologies while others adopted the technologies on an ad-hoc basis without any formal evaluation. The lecturer who used a systematic method said:

“Before introducing the social technologies for my class, I conducted a thorough SWOT analysis. I looked at the strengths, weaknesses, opportunities and threats of the system. I also aimed to understand how the potential social technologies can help achieve the course objectives. After I am fully satisfied with my evaluation, then only I chose to use blog on WordPress for my students.” [A01]

Outcomes

The outcomes of the appropriation process are likely to be the benefits or contributions of the use of OSN in higher education as a whole. There are various advantages of social technologies for students and academics (Blackey & Chew, 2009). Generally, lecturers have flexibility when using OSN and they can use this opportunity to diversify and be creative with their approaches to teaching and learning:

“Without having to seriously plan, we can diversify our teaching methods with varied teaching methods.” [A02]

In addition, the benefits of social technologies can be spread out to many aspects of higher education, such as expanding communication in semi-formal environments. Lecturers noted that quieter students, in particular, were happy to use OSN as their starting point to start with active communication and discussion in class.

“For extroverts, they have no problem but for introverts at least they have platform to communicate although they become lurkers in the beginning... but at the end, if they want to start speaking, the social technology used will be their main platform (to communicate).” [A01]

Overall, social technologies can potentially enhance the interaction between students, their peers and the lecturers.

Beside the benefits, AT also looks at the anticipated and actual issues faced by lecturers, students and higher education. These include personal issues such as emotional disturbance, control and supervision, time, skills and social aspects including cultural differences and language barrier for students. Lecturers may have difficulties in managing the interaction especially in managing different types of students. The other barriers and challenges include policy and technical (i.e suitability of courses, security, privacy, and infrastructure). Lecturers may find the barriers like the conflict of individual and student preference and the university policy.

“University does not encourage us (lecturers) to use this thing. They have a regulation for us to just use Moodle. But I think the students like and prefer this one (e.g. Facebook). Because beside this they have special group and they also communicate with the other friends.” [A08]

Alternatively, the challenges will open up new opportunities for lecturers and students to become more innovative and to gain new skills.

“Even with my other colleagues who are IT lecturers, not many of them are familiar with these tools. Let alone using it in their teaching and learning. Most of them prefer to like what they call ‘chalk and talk’, put up slides and give lecture in class.” [A10]

By integrating social technologies, it offers the higher education with a sustainable business operation and to create leadership. According to Mohidin et al (2009), conventional lecture-style approach “will thwart student’s ability to learn real world skills” but the combination of traditional teaching method and student-centered learning approach will develop leadership skills and team building.

There are several other challenges such as time consuming to lecturers as appropriating social technologies require spending time to identify the suitability and practicality of the tools for teaching and learning. Another challenge is the potential policy restrictions imposed by the university especially involving access to social technologies applications. Technical issue such as the limited infrastructure (i.e wireless access) provided in the university may posed some challenge particularly to students in optimising the capability of social technologies. Lastly, the issue of plagiarism was mentioned by some lecturers. The natures of social technologies on the Web make it easier for students to look up for answers from their friends or from other sources on the Internet. In order to overcome this situation, the lecturers introduced ground rules and explaining the ethical issues that students need to adhere at all time.

The extant literature such as Mazer et al (2007) question the motivations of lecturers who use social technologies and argue that the ways lecturers use social technologies are still not clear. In this current work, we have also extended our own questions as posed in Hamid et al (2010) on how and why lecturers use OSN for teaching and learning. From our empirical data, we identified a number of factors motivating lecturers in using social technologies for their teaching and learning. We also discovered at least two approaches lecturers appropriate OSN: systematically or on an ad-hoc basis.

The use of AT as a lens to explain the phenomenon provides a mechanism for us to better understand and to provide initial answers to the posed research question.

7 CONCLUSION AND FUTURE WORK

In this paper, we have investigated the ways lecturers use OSN for advancing teaching and learning. To make sense of our empirical data, the constructs of Activity Theory were employed as to provide the theoretical lens in understanding how social technologies were appropriated for OSN activities. Our preliminary findings revealed that the use of OSN are influenced by the characteristics of the lecturers. The characteristics of the lecturers who are technology-savvy, up-to-date with the latest development in the technological landscape and being early adopters of such technologies drive the use of OSN activities. We also found that the process of OSN use can be quite complex and hence requires management on the part of lecturers. In particular, the findings provide us the necessary understandings of the processes not commonly known on how lecturers use OSN for teaching and learning. The empirical data also indicate the importance of the social technologies features in particular those that support constructivist learning modes such as content generating, sharing, interacting and collaboratively socialising. The eventual outcomes from the use of OSN are seen from the perspectives of the benefits, challenges and opportunities associated with OSN use as reported in this paper.

This paper is not without its limitations. Being the first phase of the study and exploratory in nature, the number of research participants can be considered as small. This can be resolved by gauging the response from a larger group of participants. The views can be considered as skewed to the perspective of the lecturers only. However, this limitation is by designed. In the future works (i.e next phase of the research), feedback from the students themselves will be gathered via focus group discussions with Malaysian and Australian students. Further, the inputs from more lecturers will be collected and data collection from another country context (i.e Australian lecturers) has been undertaken. These triangulations of data are expected to strengthen the findings of this research to provide a richer understanding of OSN use in higher education.

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