Key Knowledge Generation

Asynchronous Learning Tools Usegraduate Study: A Preliminary Survey

NOR RASHIMAHWATI TARMUCHI[1], HASLINDA MOHAMED[2], SAIDATUL AKMAR ISMAIL[3]

[1, 2, 3] University Tun Hussein Onn Malaysia

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ASYNCHRONOUS LEARNING TOOLS USE IN GRADUATE STUDY: A PRELIMINARY SURVEY

NOR RASHIMAHWATI TARMUCHI[1*], HASLINDA MOHAMED[2], SAIDATUL AKMAR ISMAIL[3]

[1, 2, 3] Universiti Teknologi Mara, Malaysia

Abstract. In this era of Internet and information, communication, technology (ICT) advancement, most novice and expert researchers share their intellectual output virtually. In the beginning, this was done as part of their personal page on departmental websites or blogs. Now, asynchronous tools, which perform as idea management or argumentation channels such as, blogs, wikis, chats, forums, Q&A or FAQ sites, and social networks provide unprecedented opportunities for online engaged communities or organizations to express a discourse and act at a wide scale. This indicates the researchers' aspiration for informal learning circles as well as expanding their work cost-effectively. By creating informal online learning through collective intelligence, it means organizing the random posting of these scholarly communications and interactions into well structured, secured and attractive virtual spaces. The expected benefit of this informal online learning is included as a supplement to the consultation and supervisory process, provides institutional visibility and prestige and also to serve as a basis for a new model of consultation and supervisory communication. Understanding how and why researchers engage in these kinds of activities is important for developing better new tools for the research going forward. Based on the findings of an online pilot survey with 39 respondents (i.e. postgraduate students), this study endeavours (1) to ascertain the validity and reliability of the questions in the full study questionnaire; (2) to identify preliminary understanding of the use of asynchronous informal learning tools among the postgraduate students.

INTRODUCTION

The nature of the researcher's work is virtually boundless. Researchers, such as postgraduate students (novice and expert), are expected to keep updated with the developments of their fields of interest through the involvement of research and scholarship, participation in professional societies, and read the latest research studies in the field. In this era of internet and information, communication and technology (ICT) advancement, there is abundance of academic and scholarly output virtually accessible. From the beginning, these scholarly outputs were made accessible virtually as part of the researcher's personal page on departmental websites or blogs. This way could expand the researcher's work cost-effectively.

Now, asynchronous tools, which perform as idea management or argumentation channels such as, blogs, wikis, chats, forums, Q&A or FAQ sites, and social networks provide unprecedented opportunities for online engaged communities or organizations to express a discourse and act at a large, massive scale. The idea of online interaction and engagement between the researchers has allowed the new breed of researchers to share their knowledge, expertise and skills via virtual space. By creating informal online learning through collective intelligence, it means organizing the

random posting of these scholarly communications and interactions into well structured, secured and attractive virtual spaces. The expected benefit of this informal online learning is included as a supplement to the consultation and supervisory process, provides institutional visibility and prestige and also to serve as a basis for a new model of consultation and supervisory communication. It is said that learning through collaboration is one of the most effective modes of learning because it enhances the scope of learning and fosters critical thinking (Hashim, Habib, Zakariah & Mohamad, 2014). Understanding how and why researchers engage in these kinds of activities is important for developing better new tools for the research going forward.

Purposes of the Study

A pilot survey was conducted to understand postgraduates in the faculty of Information Management, University Teknologi MARA familiarity and perception on the usefulness of online asynchronous learning tools, and their willingness to use the tools to support their learning experience in the future. The postgraduates' respondents included the novice and expert researchers in this context of the study. Findings from this survey

*Corresponding author: Nor Rashimahwati Tarmuchi
E-mail: norra758@salam.uitm.edu.my

will be the basis to improvise the actual survey instrument. The actual survey will help to gather the postgraduates' perspectives on asynchronous learning and whether there is a need to set up and develop environment that support it.

Asynchronous Learning Tools: An Overview

Asynchronous learning is the concept of students learning and interacting with the instructor or among other students at different places and times. This is opposite of synchronous learning where students learn at the same time by attending a face to face class. Asynchronous communication allows equal participation, especially for people who are reluctant to interact with face to face communication (Harasim, 1996). Example of tools to support asynchronous learning includes blogs, discussion board, wikis, email and electronic mailing lists.

Blogging improves students' overall learning by helping them to think about concepts outside of the classroom. According to Halic, Lee, Paulus and Spence (2010) students acknowledge that blogging facilitates the sharing of knowledge among peers and enhances the sense of community through student and instructor interactions through the blog. Blogs are also used by instructors and students as a task management tool, and as a learning journal or log to gather relevant information and ideas concerning to specific topics (Sim & Hew, 2010).

The discussion board is an important tool of learning because it promotes situated learning, facilitates a social construction of knowledge and customized learning experiences (Ajayi, 2009). A study by Duncan, Kenworthy and McNamara (2012) had shown that students' engagement in asynchronous discussion board together with synchronous communication is positively related to overall course grade.

Wikis have been used by instructors for presenting course material such as resources and external links. Users of wikis are able to add and edit thus gradually improving the content of a particular topic. Wikis record changes and maintain extensive page histories to prevent unacceptable modifications. Due to this feature, wikis in a way support evolutionary knowledge building and progressive problem-solving (Cole, 2009). Wiki promotes effective collaborative learning by facilitating rapid feedback, easy navigation and tracking facilities (Su & Beaumont, 2010).

Email can be used as an extended communication medium between instructor and students, especially if students require further clarification on particular subjects. Email notification can push a member of the online community to re-enter the discussion to reply to a specific comment, therefore it has an influence on asynchronous discussion interactions (Garbrick & Clariana, 2015).

Frequently asked questions (FAQ) discussion is also considered as an asynchronous learning tool. FAQ discussion reduces the time spent by instructors, administrative staff and students in dealing with administrative procedures (Warren, 2008). The FAQ tool helps instructors to address repetitive questions in discussion forums and post their answers on the Web via this tool. The FAQ is like a "ask an expert service" site in which the FAQ system may determine which expert will respond or allow experts to declare which questions they will answer by locking the question (Harper, Raban, Rafaeli & Konstan, 2008).

Podcasting is a tool that enables user to upload and post recorded material such as audio or video on a website where users can download it to listen or watch at a later time. Higher education has been reported to use podcasting of lectures and explanation of difficult concepts, explanation of assessment requirements or suggestion for further readings (Scutter, Stupans, Sawyer & King, 2010).

Another asynchronous learning tool which can be useful for postgraduates is e-portfolio. It is a tool that enables students to collect and organizes evidence such as papers, projects, and reflections of their learning experiences. These collections can be shared with the instructor or supervisor thus creating a foundation for advising sessions to improve intellectual and personal development (Ambrose & Williamson, 2013).

THEORETICAL FRAMEWORK

The survey was based on Technology Acceptance Model (TAM). According to Morris and Dillon (1997) TAM is suitable for understanding user perceptions of usefulness, ease of use of system, attitudes toward using the system and behavioural intentions to use a system. TAM posits that there is a direct relationship between perceived usefulness and intentions to use. Perceived usefulness is the degree to which a user believes that using the system will increase his or her performance; ease of use is the degree that the user thinks the system will be effortless to use; and intention to use is the degree to which end-users will use new technology before the system is actually implemented (Morris & Dillon, 1997).

REVIEW OF RELATED LITERATURE

Although TAM posits a direct relationship between perceived usefulness and intentions to use, a study by Park (2009) on students' intention to use e-learning had indicated that perceived usefulness and perceived ease of use did not have a significant direct effect on intention to use. Park (2009) however, stated that perceived usefulness and ease of use were related to the attitudes toward e-learning. According to Liu, Chen, Sun, Wible and Kuo (2010) found that the impact of perceived ease of use on intention to use an online learning community is not as strong as that of perceived usefulness. The user will feel the system more useful when it is easy to use, hence giving stronger intentions to use the online learning community. In another study by Farahat (2012) revealed that students' perception of ease of use and usefulness among others were identified as significant determinants of students' intention to practice online learning. Techanamurthy, Mohamad, DeWitt and Alias (2014) in a research on the perceptions of graduate students on using wikis in a statistics

class had identified that students faced technical complexities during the use of the Wiki as a learning tool and they tend to only use Wiki minimally to complete their group work. Most of the time the participants of the research preferred to face to face interaction.

Tarhini, Hone and Liu (2014) researched on the moderating effect of gender and age on e-learning acceptance. He found that age moderates the effect of perceived ease of use and perceived usefulness on behavioural intention to use e-learning. While in another study by Warren (2008) a higher percentage (73%) of undergraduates was reported to use the discussion board compared to only 28% of postgraduates who used the site. The percentage of undergraduates who thinks the discussion forum useful is also higher (71%) whereas only 33% of postgraduates found the site helpful.

In a study by King (2014) students were asked to rate most extremely important or very important course management system features. The feature with the highest rating was "instructor feedback on assignments/assessments" and the feature with the lowest rating was "online chats with other students." This show that students value contact with the instructor. Usman (2015) has conducted a study on the preference of undergraduates and postgraduates of International Islamic University of Malaysia

(IIUM) on types of knowledge sharing tools. On the contrary, the study has shown that the majority of the students prefers features such as search engine, instant messaging, e-mail, online group discussion, electronic documents, tutorials, and news and adverts of the knowledge sharing tools than others. The least preferred features of knowledge sharing tools to support students' sharing activities are help desk (care lines), audio conferencing, web conferencing, and instructional games. This implies that students prefer them on their own as indicate by preference on search engine usage and communicating with friends via the instant messaging.

METHODS

There are four hundred postgraduate students in the faculty where the pilot test survey was conducted. An Online survey was created using the Google Form and distributed via e-mail and mobile instant messages to 45 postgraduates in the faculty.

To investigate the postgraduates familiarity with the asynchronous tools, Technology Acceptance Model is being used to measure perceived usefulness, ease of use and intention to use the tools.

The framework for this study is shown below.

FIGURE 1
Theoretical Framework of the Study
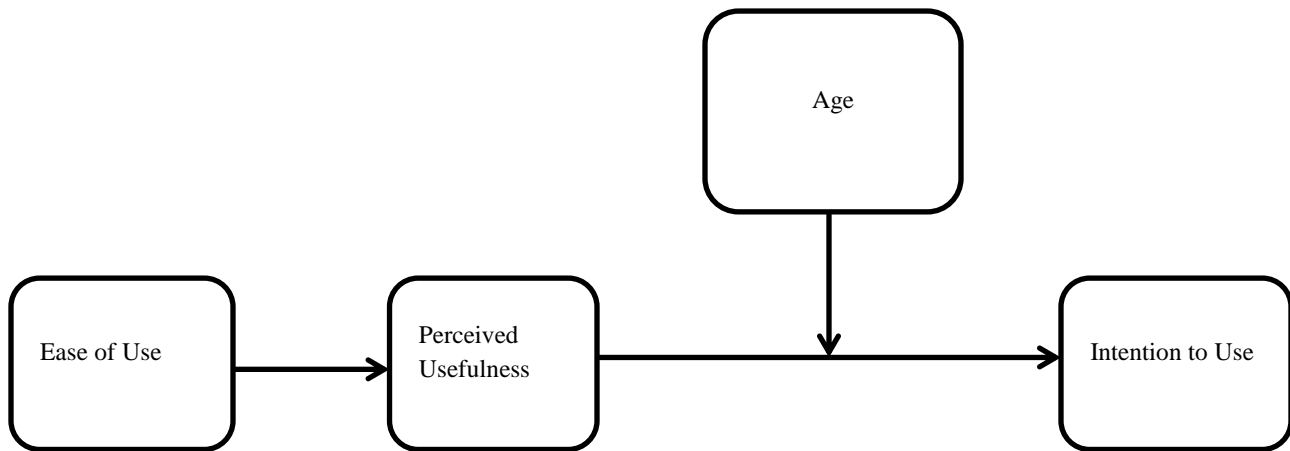
The study will seek to answer the questions of which asynchronous learning tools the postgraduates are familiar with and feel easy to use.

In addition the actual study will also test these hypotheses:

H1: Perceived Ease of Use will have a significant positive influence on Perceived Usefulness

H2: Perceived Usefulness will have a significant positive influence on Intention to Use.

H3: Age will moderate the association between Perceived Usefulness and Intention to Use.

RESULTS AND DISCUSSION

Out of forty five (45) selected respondents, only thirty nine (39) answered the survey. The percentage of PHD students who answered is 23.1%, whereas the percentage of master students is 76.9%. The respondents are mainly age between 25 to 30 years (Table 2).

TABLE 1
Number of Respondents According to Academic Program

Academic Program	N	%
Master	30	76.9%
PHD	9	23.1%
Total	39	100%

TABLE 2
Number of Respondents According to Age

Age group	N	%
25 – 30	26	66.7%
31 – 35	4	10.3%
36 – 40	3	7.7%
40 and above	6	15.4%

The Cronbach Alpha is used to test the reliability for each group of items. The Cronbach alpha value for all constructs are above 0.7, suggesting that the questionnaires used in the study is reliable.
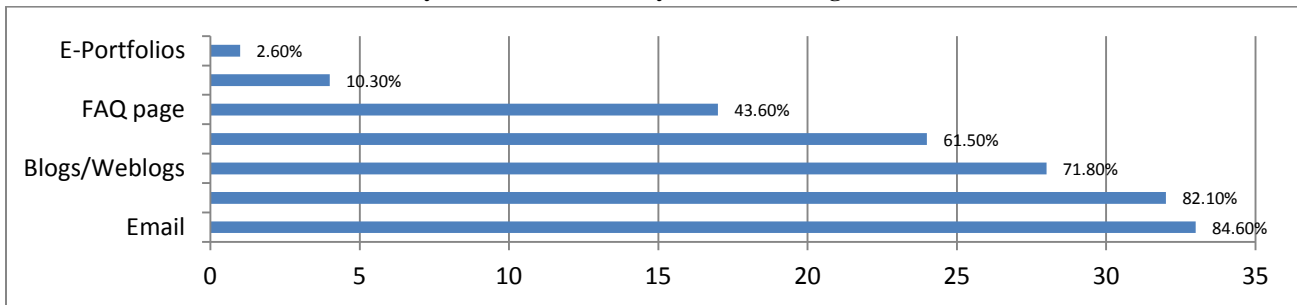
TABLE 3
Cronbach Alpha for all Items

Items	Cronbach Alpha
Perceived Usefulness	0.9384
Perceived Ease of Use	0.8345
Intention to Use	0.9419

Respondents were given a list of asynchronous learning tools and were which tools they have knowledge of or have heard about. The tools mostly known by the respondents are email, electronic discussion group/forum, blogs/weblogs, and wikis with the percentage of (84.60%) and (82.10%) respectively. About half of the respondents (43.60%) acknowledged FAQ page as one of the asynchronous learning tools. Only a few of them have heard about podcasting and e-portfolios as asynchronous learning tools.

FIGURE 2
Students Choice of Asynchronous Tools they have Knowledge of or have Heard About

Based on Table 4, most respondents specifically those aged between 25 and 30 years old chose an electronic discussion group and email as tools which are easy to use. The other tool that some of the respondents find easy to use is a Wiki. This is followed by one respondent who chose the blog as easy to use. None of the respondents identified FAQ page, podcasting and e-portfolio as

easy. Based on these findings, it is obvious that most of the respondents are not familiar with podcasting and e-portfolio. As for the FAQ page, although (43.60%) of the respondents have knowledge about it, but none of them find the tool is easy to use.

There is a need to add a question on rating most important asynchronous learning tool and the opinion of the respondents why the rate the tool as very important. This is based on the study by King (2014).

TABLE 4
Age and Type of Asynchronous Learning Tools Easy to Use

	Blogs/ Weblogs	Electronic discussion group/Forum	Email	Wiki	Total
25 – 30	-	12	10	4	26
31 – 35	-	-	3	1	4
36 – 40	1	2	-	-	3
40 and above	-	4	2	-	6
Total	1	18	15	5	39

Overall, the majority of respondents were quick to respond to the survey, which the link of the survey form was emailed or send via mobile phone's instant messaging application. Only two respondents questioned back through email on the meaning of asynchronous learning tools. This has been taken note of where the actual survey should have a brief explanation on the meaning of asynchronous learning tools.

Scope and Delimitations of the Study
The population for this research was limited to, master and PhD students in one faculty. The study was conducted in one of the public universities which has fairly reflective of the variation of postgraduates in other universities in the country. This research used a purposive sample of 45 postgraduate students.
The delimitation of this study is that, it is only concerned with the use of asynchronous learning tools among postgraduates. This study is aimed (1) to ascertain the validity and reliability

of the questions in the full study questionnaire; (2) to identify preliminary understanding of the use of asynchronous informal learning tools among the postgraduate students. It does not aim to develop an instrument for measuring the effectiveness of asynchronous learning tools use among the postgraduate students.

CONCLUSION
This study has demonstrated the reliability of the survey instrument and the modifications that is applicable for the actual study. It has also provided a better understanding of the format of the survey for the target population. There is a need to strategize the implementation of the actual survey, especially on how to handle respondents' willingness to participate in the study. At another stage, similar research can be done to gain the instructors' or the faculty lecturers' viewpoint on the usage of asynchronous learning tools for postgraduate programs.

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— This article does not have any appendix. —