

INFORMATION SEEKING THROUGH INTERNET: A CASE STUDY OF TRAINEE TEACHERS IN MALAYSIA

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ABSTRACT

This paper presents a qualitative case study on trainee teachers' experiences in using Internet for seeking information. The study employed documents analysis, observation, interview and field notes involving Malaysian trainee teachers. Findings demonstrated the high level of computer usage among participants. Furthermore, they responded positively regarding the benefits of using Internet, whilst agreeing to have various methods for information seeking through the Internet. Yet, some important issues have emerged regarding the passive attitude towards Internet usage, slow Internet connection and poor Internet facilities. These factors give rises to what further research may need on adapting Internet usage for teacher education.

KEY WORDS: Trainee teacher, Education, Internet, Information seeking, Information and Communication Technology.

1. INTRODUCTION

The progressive growth in technology has fundamentally changed the pedagogy of current education system. With such rapid speed of educational technology, there is no exception for the utilization of Internet as one of technological delivery medium for teaching and learning process. Nowadays, Internet technologies serve as platforms where individuals can access information from various field of knowledge. With the use of Internet, today's educators have boundless alternatives to apply Internet as a way to integrate technology in classroom. For instance, the Internet brings forth new opportunities to create various learning environments such as instant messaging, file sharing, social networking and blogging (Attwell, 2007). In any way, Internet can intensely be used in the classroom either as a teaching tool or a delivery medium (Luan et al., 2005).

It has been deemed increasingly important for teachers, especially those entering teaching profession to be prepared to thrive in the ever-changing technological society. As far as the development of educational technology is concerned, teacher training is one of the areas where information and communication technology (ICT) should be used intensively. The rapid pace of innovation in educational technology, along with the global fascination with the Internet, continues to challenge today's trainee teachers to develop both competence and confidence in integrating technology into learning materials. In Malaysia, the government has made substantial investments in ICT infrastructure in schools across the nation (Rahman, 2004). In this regard, the development of Malaysian future teachers needs to align with the enhancement of education system to ensure that they are able to adapt with technology-integrated teaching environment. Yet, there continues to remain a consensus among some educational practitioners that trainee teachers in Malaysia might

not be well-prepared to serve in such learning environment. The issues raised include inability of student teachers to think critically due to insufficient instructions (Tasir et al., 2008), lacking of confidence among teacher education students to integrate ICT in classroom (Bakar and Mohamed, 2008), infrequent use of computers among trainee teachers and lack of supports from administrators (Fook et al., 2011).

While a number of these critics do not rule out the acknowledgement of Internet as an effective tool for seeking information, opinions do differ as to how 'effective use of Internet' should be achieved in teacher education (Barton and Haydn, 2006; Ryan and Davies, 2010). To address this issue, it is helpful for researchers to identify how well the trainee teachers are coping with the requirement to use Internet as their resourcing tool. Thus, research is needed to ascertain the acceptance level of trainee teachers where the Internet is concerned. To what extent have the trainee teachers been utilizing Internet as a tool in seeking information? What are their perceptions on their level of Internet usage? What are the challenges faced by trainee teachers during their Internet resourcing activities? This paper sought to investigate these issues and hence to provide a glimpse of future needs of Internet as an effective research tool for teacher education.

2. LITERATURE REVIEW

2.1 Internet in Education

The needs to integrate Internet applications in the education field are nowadays assumed by most educational practitioners to be a prerequisite to living in the 'information technology age'. Internet is one of ICT applications which has been touted as potentially powerful enabling tools for educational change and reform (Tinio, 2003). In fact, Tinio (2003) listed three general approaches to the instructional use of Internet and computer, which are: learning about computers and the Internet (technological literacy), learning with

computers and the Internet (technology facilitates learning), and learning through the computers and the Internet (integrating technology with curriculum). The development of the Internet also has given rise to the virtual classroom and the virtual university. (Attwell, 2007). Learners are now utilizing various Internet applications to support their learning, such as instant messaging, file sharing, social networking and blogging (Attwell, 2007). Meanwhile, a study conducted by Jones (2002) found that the degree to which students use the Internet for resourcing activities suggests that they will very likely to continue using Internet in the future. Though, Hirschheim (2005) expressed concerns on both pros and cons on Internet usage in the field of education. Through Internet, more and new educational opportunities and experiences can be provided to both students and educators (Hirschheim, 2005). Even though Internet delivers convenience and flexibility, losses of educational quality may occur as a result of Internet delivery of lessons (Hirschheim, 2005).

2.2 The use of Internet in Teacher Education

The potential of Internet usage for empowerment of trainee teachers has been enlightened by a succession of reports that the technology is positively accepted in teacher training programs throughout the world. According to Wright et al. (2002), pre-service teachers reported that they still are prepared to implement technology in lesson plans even though they have limited technological resources in the classroom. Furthermore, they were well-trained and entered the training program with full enthusiasm (Wright et al., 2002). Despite of the positive insights, a study by Birgin et al. (2010) revealed that the first year pre-service teachers used computer and the Internet less for learning purposes. It was suggested that teacher education programs should emphasize more on encouraging the trainee teachers to complement the integration of technology and learning process (Birgin et al., 2010).

Past research suggested that Malaysian trainee teachers use the Internet for various purposes, such as for seeking learning information through search engines (Lau et al., 2010), emailing and resourcing through Telnet, World Wide Web and Newsgroups (A.Razak and Shanmugam, 2010), social activities, seeking information and other leisure activities (Luan et al., 2005). Lau et al. (2010) found that the frequency of using search engines through the Internet differed significantly for different training program. Luan et al. (2005) reported a positive finding from their study on Malaysian pre-service teachers in one public university. It was found that majority of them used the Internet for many reasons, as well as showing positive attitudes toward this technology (Luan et al., 2005). In this regards, the use of Internet for teaching and learning purposes is mostly presumed to be positively accepted by the trainee teachers in Malaysia. An intriguing finding by Teo et al. (2009) showed that the Malaysian pre-service teachers had more positive attitudes towards computer and internet use. They also perceived computers to be easier to use and more useful (Teo et al., 2009). A.Razak and Shanmugam (2010) also reported positive attitudes towards the Internet use as resourcing tools among the trainee teachers.

However, throughout this body of existing research, there are a number of unanswered questions regarding how effective use of Internet in teacher training programs can successfully be achieved. Furthermore, despite of the various studies on ICT integration in education, there is still lacking of research to study specifically the perceptions on Internet usage among trainee teachers.

3. METHODOLOGY

3.1 Research Design

To understand how Internet is used for information seeking among trainee teachers in Malaysia, a qualitative research design, which is single case study, was employed. Through qualitative case study methodology, the research was explored in depth within its context through multiple facets

(Baxter and Jack, 2008). The case study involved a teacher training institute in Malaysia. The location was chosen since the institute was well equipped with multimedia labs and all lecture rooms were equipped with computer facilities and optical fiber connections. Data was obtained through the use of documents analysis, participant observation, in-depth interview and researcher's observation field notes to identify whether the level of computer usage among trainee teachers is influenced by their personal background, attitude, facilities provided, training undergone, and supports received from institutional management.

3.2 Participants

This research involved a four-month long (March to July 2009) observation on six trainee teachers in an undergraduate teacher preparation program from Malaysian Teacher Training Institute. In details, the participants were enrolled into the course of Technology and Design, particularly in the field of Food Management. The learning process involved steps to integrate learning with Internet resourcing skills.

Sampling technique used was purposive sampling. Since the objective was to gather data as many as possible, the sampling process was stopped when no more data could be gathered from new sample. Hence, level of data saturation and redundancy are the main criterion of the research (Merriam, 2001). The setting for the research was in general trainee teachers with experiences in using computer. According to Merriam (2001), participants or location of a qualitative research must be chosen based on several criteria. Participants of this research reflected trainee teachers of third semester who enrolled Food Management subject as a pre-requisite for their degree program. To gain deeper knowledge on each participant's academic performance, the lecturer who taught them this subject was also chosen to be interviewed.

Respondent A, Suhaili. A happy-go-lucky trainee teacher who spoke fluently. She spoke eloquently, in a way where sometimes she used reassuring

statements, as an example “As I mentioned before,...”. She also looked more matured than her actual age.

Respondent B, Nuar. A trainee teacher who looked serious. Whenever a question was asked to him, he would frown as if he was trying to get the most precise answer. He was someone who would emphasize on accuracy of information and think twice before saying anything. In our observation, he always stay put with his own stand. For example, when researcher asked him, “Are you skillful in using computer? Do you always access the Internet to search for information?”, he just nodded.

Respondent C, Mira. A trainee teacher with a simple appearance and interesting character. When she could not explain a question in the interview session, she would just say “No”, but did not give the explanation immediately.

Respondent D, Yati. A gentle trainee teacher with soft voice, most of the time needed to be reminded to speak more loudly. Questions had to be reworted and repeated to gain inputs from her.

Respondent E, Fitri. A trainee teacher with small physical appearance and low voice tone. Always smiled and nodded whenever questions were asked to him. Sometimes, he looked as if he did not confident with his own answers, yet he was very enthusiastic in the session.

Respondent F, Fakry. A trainee teacher who looked tidy, smart and enthusiastic. He looked relax and confident whenever he answered any question. He also looked committed and more focused.

3.3 Data sources

Data were collected from the following research instruments: documents analysis, participant observation; in-depth interview; and researchers' observation field notes.

Documents analysis. On day 1 of the data collection process, researchers requested institutional management to identify possible participants according to the specified criteria. For the selection process, documents analysis was performed on the Reports of Trainee Teachers' Performance in final semester examination and the Folio of Knowledge-based Coursework.

Participant observation. Observation is a very important method of this qualitative research. In general, observation was conducted during the four-month period to study the participants' Internet skills in terms of what is their most frequently visited website, average time spent, availability of Internet access, and other non-professional uses of Internet.

In-depth interview. Before the in-depth interview was conducted, a stimulus test was administered to the participants and their answers were analyzed. Continuous data analysis process is recommended for qualitative research (Merriam, 2001). Concurrently, the lecturer who taught participants had also been interviewed to collect details regarding the research questions. By using protocols prepared, in-depth interview was further conducted to the participants to identify their behaviors in using Internet for information seeking activities. All conversations were recorded via audio and had been transcribed.

Observation field notes. Data observed by researchers were written and recorded into the field notes according to researchers' personal interpretation on the case study. Skills gained by researchers through experiences in teaching, book reading and services from experts had also contributed to the observation process.

Data gathered from these instruments were listed according to the categories of Internet usage, which are Internet search engine, e-mail, homepage, educational institution, ICT, teaching and learning, and other types of Internet usage.

3.4 Data Analysis

Firstly, initial research was conducted to three trainee teachers with same sample criteria as the research participants. This was to verify the validation of items for observation and pre-structured interview questions. The items in each instrument were validated by another lecturer who had experiences in teaching computer subject. Responses from the trainee teachers which had been analyzed were triangulated for validation process.

Then, data analysis was begun by collecting raw data from all research instruments to be analyzed. Through observation, categories were identified and data were re-coded according to the categories. Then, the interview data was transcribed to see participants' perception on their method of using Internet for information seeking in learning activities. As patterns in participants' responses began to emerge, categories that seemed to describe the research questions were identified and refined. Specifically, verbal protocol analysis was performed on the interview results. Observation field notes contributed to enrich the qualitative data of this research. Content analysis was performed on all responses collected from participants from each of the research instruments. Other irrelevant and amiss values were excluded from the analysis. The data were triangulated to verify the validity and reliability. Then, they were analyzed by using Microsoft Excel 2000 to count the frequency and determine the ranks of web sites visited by the participants in the process of using Internet for resourcing activities.

4. RESULTS

From the analysis of the results, it has been found that, regardless of the various methods the trainee teachers applied in seeking for information through the Internet, their level of computer usage was high. In addition, the participants gave positive responses towards Internet usage. The primary sites of Internet access for research participants were Google, Yahoo and Hotmail, which were mostly through Internet Explorer. However, concerns were raised regarding the

issue of lacks of exploration to new web sites, slow Internet connection, and lacks of facilities and Internet infrastructure.

4.1 Observation on General Internet Resourcing Skills

It had been identified through observation that the trainee teachers were most likely to use Internet for exploring four websites, which are hotmail.com, yahoo.com, google.com and cdc.com.my. The average time spent per visit on each website was around 30 to 40 minutes. In general, all trainee teachers followed the standard method in accessing information through Internet. However, they were most likely to visit only websites that they were familiar with. In other words, the trainee teachers did not spend much time to explore any other new websites. Even though the institution provided many Internet stations, only four stations could be used by the trainee teachers. Hence, the observation was only conducted on the four stations. During a two-week observation period, Internet accessibility at the institution was noted to be quite good, except for one day where the network faced down line issue. Another interesting aspect emerged from the observation was that the trainee teachers spent a lot of time to use other Internet service, Internet Relay Chat (IRC), which was believed to be one of the “hogging-the-line” factors.

4.2 Trainee Teachers’ Experiences with Internet

Overall, all six trainee teachers gave positive responses in the interview form toward the research title. Table 1 summarized the participants’ perception on using Internet for their information seeking activities:

Table 1 : Trainee Teachers’ Perception on Using Internet

Points	Participant Responses
Using Internet is fun	Suhaili : “Accessing Internet is fun since we get to know every information in the country and across the

	world”
	Yati : “ It (using Internet) is also fun. It teaches us to get information quickly”
	Fitri :“There is a lot of advantages and it (using Internet) is also fun for me and my friends”
	Fakry : “It (using Internet) is fun for me. It is also easy to learn”

Internet helps increasing skills and knowledge	Nuar : “ Seeking information through Internet helps me to increase my knowledge. I feel that after I learn to use it (Internet), I get to use computer optimally and I can apply it in every subject I need to learn”
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Internet gives a lot of information	Mira: “ Internet is very advantageous in terms of any facet of knowledge we need to find”
	Yati : “ It (Internet) tells us a lot about any information.. the world without boundaries.. in every field of knowledge we want to find”
	Fitri : “Internet helps us to get information throughout the world just by the tips of our fingers.”

Internet helps connecting people	Fakry : “ I always seek for information through Internet. Besides, I have my own email account and I stay connected with my friends, within or outside the country, to exchange information”
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4.3 Level of Internet Usage among Trainee Teachers

Overall, findings demonstrated that the level of Internet usage among the trainee teachers of third semester from the institution was at a high level. The finding was congruent with interview results where during the session, majority of participants agreed that they frequently used the Internet in their own teaching and learning activities. The following described their statements in response to the research question:

“I always use the computer to access Internet in searching for information. Furthermore, it has always been my main reference”. (Suhaili, 22nd July 2009)

“Yes (using Internet), since it is easy for me to get information and plus, there are many to be find”. (Nuar, 23rd July 2009)

“Yes (using Internet)... because information which I have collected from Internet can be stored into the computer”. (Fitri, 23rd July 2009)

4.4 Information Seeking Through Internet

It was found that the trainee teachers used different methods to search for information through Internet. Examples of methods used were through Internet Explorer, Google, Yahoo and other web pages. Some participants remarked:

“To search for information, I always access the Internet through Google because it is faster”. (Suhaili, 22nd July 2009)

“Yes, I agree with Suhaili, because it is also easy for me to search for information. Besides, there is a lot of information I can find”. (Nuar, 22nd July 2009)

“By using email, I can get more learning materials easier and faster. Besides, I can exchange information with other friends from this institution”. (Mira, 24th July 2009)

4.5 Barriers in Internet Usage

Majority of research participants responded consistently to questions asking them on barriers they faced during accessing Internet at the teacher training institution. One of issues arisen was slow Internet connection. According to one respondent, “*This institution can be referred as fails in providing good Internet access since there is always no Internet coverage.. besides getting slow Internet connection for no particular reason*”. One participant highlighted another issue

regarding the Internet usage with the comment: *“I really am interested to widen my knowledge and skills in using ICT, but there are lacks of facilities here..”*. Curriculum barrier was another aspect of concern, as expressed by another participant: *“.. the effectiveness of learning process depends highly on the ICT usage. This includes the appropriate amount of contact hours in interacting with the computer. If this does not help me to enhance my skills in ICT, people will see me as someone who is left behind”*.

In summary, this research had identified four possible barriers to a successful integration of Internet usage in teachers’ training institutes. The factors of Internet barriers were summarized in Table 2:

Table 2 : Barriers in Internet Usage among Trainee Teachers

#	Internet Barriers	Factors
1	Incompatible with learning syllabus	<ul style="list-style-type: none"> - improper planning in using ICT for curriculum - ICT usages not dynamic for learning
2	Negative attitude towards integrating Internet in learning method	<ul style="list-style-type: none"> - fixated mindset on traditional classroom method - low computer literacy
3	Lacks of skills in using Internet	<ul style="list-style-type: none"> - lacks of ICT training and teacher development program
4	Technology gap in institutions	<ul style="list-style-type: none"> - Lacks of Internet facilities in institutions - Slow Internet connection - Financial constraint to provide more and better tools

5. DISCUSSION

The purpose of this study is to gain an insight on how was Internet being utilized by the trainee teachers in the teacher training institution as a way to seek for information in assisting their learning process. This study involved a small group of six participants and therefore, conclusions on Internet resourcing skills among the trainee teachers cannot with any confidence be generalized. However, findings from this study does point to some initial, tentative, implications for the use of Internet in supporting learning materials for teacher education:

5.1 Perception on Internet

The participants uniformly reported how Internet usage is beneficial for their information seeking activities. Overall, they reported that using Internet is fun, helps increasing their knowledge and skills, gives a lot of information and helps connecting them with other people. The study revealed that trainee teachers who had positive perception toward Internet usage also used Internet frequently for their information seeking activities. As one participant mentioned, *“I always access the Internet because I feel that Internet is very advantageous in terms of any facet of knowledge I need to find”*. This finding is similar to with Luan et al. (2005) who found that pre-service teachers used Internet frequently for educational purposes since they perceived Internet as a useful tool which improve their productivity as students in higher institution.

5.2 Computer self-efficacy

Findings from this research emerged some positive aspects of computer usage among the research participants. There was a high level of computer usage among the trainee teachers as they used it for the information seeking activities. Students' well experience in using computer is likely a significant factor in their level of using Internet for resourcing activities. One plausible explanation is that Internet access certainly involves using a machine called the computer. Findings

from this study illustrated how participants' responses on computer usage and Internet usage were intertwined. Participants frequently mentioned their positive perceptions on Internet usage whilst agreeing that their level of computer usage was also high. "*I always use the computer to access Internet in searching for information*", mentioned by a participant. This finding is in alignment with Almekhlafi (2004) and Awolaye et al. (2008) who reported that the trainee teachers were consistent in using both computer and the Internet.

Though, the point is still arguable since the rapid development of technology has shown that nowadays, Internet is also widely accessible by trainee teachers through mobile devices (Seppala & Alamaki, 2003; Wishart et al., 2007). However, as handheld devices, mobile phones are more likely to be viewed as personal devices rather than to be used for accessing information (Wishart, 2009).

5.3 Trainee teachers' Attitude towards using Internet

From the observation, the researchers found that the trainee teachers managed to apply various methods comprising search engines and email services to search for information through the Internet. Despite the research participants' claims that they always use Internet to seek for information, majority of the trainee teachers showed a passive attitude towards exploring other new web sites which they never familiar with. This point was noted during the observation session where the trainee teachers appeared to be only exploring websites which they already familiar with. Consistent to the literature review by Lau et al. (2010), it was also suggested that trainee teachers should explore more alternative search engines to look for more information. This finding leads to a point which shows that the trainee teachers in this study were less dynamic in utilizing Internet as information tool for their learning purpose. Additionally, there were some cursory evidences that the trainee teachers spent a lot of time on other unrelated Internet applications, especially IRC. The unrelated Internet

activities may contribute to the lacks of skills in using ICT for learning. This point was also argued by Matthews and Schrum (2003) who implied that students who spend time more on recreational Internet activities may know very little about exploring the Internet as an educational tool. Overall, these results clearly supports the view by Baylor and Ritchie (2002) which suggested that personal attitudes towards using Internet may influence the level of Internet resourcing skills among trainee teachers.

5.4 Roles of educational institution

Concrete claims cannot be made about the impact of Internet facilities provided by educational institution on trainee teachers' competency in using ICT. However, it is suggested from the findings that most trainee teachers were unsatisfied with the poor service of Internet facilities provided by the institution. One participant made the point clear by saying: *"This institution can be referred as fails in providing good Internet access since there is always no Internet coverage..."*. Other than that, the observation also had shown that although many Internet facilities were provided, only some can be fully utilized. Financial implication is found to be one of the main criteria needs to be emphasized by the institution in providing quality technology-integrated learning for the students. Else, institution lacks of effort to maintain and improve Internet facilities provided may have introduced a technology gap between students and learning process. Similar studies by Luan et al. (2005) and Ihmeideh (2011) also had found that insufficient Internet facilities in the institution may have caused trainee teachers to spend time less on the Internet.

It was also noted that one of the barriers faced by the trainee teachers was the incompatibility between ICT and curriculum outlined. Findings from this study showed that the institution still needs some improvements on ensuring intensive and extensive ICT usage in learning and teaching process since in some cases, ICT usage just 'happened to be there' in the curriculum. Relating to

this issue, one participant highlighted the issue of ICT contact hours which was not appropriate and less effective in helping students to enhance their ICT skills. Similar issue was highlighted by Ihmeideh (2011) who reported that trainee teachers did not receive sufficient supports from the cooperative teachers to use ICT in their practices. Furthermore, a study by Bakar and Mohamed (2008) found that even though trainee teachers have the necessary ICT skills, they may not skillful to integrate ICT in teaching because there is no model for them. One possible explanation is that the teacher educators themselves do not use ICT in teaching (Bakar & Mohamed, 2008). As has been recommended by Dexter and Riedel (2003), educational institutions can help new teachers to be ready to use technology in education by developing coursework which requires them to demonstrate their technology integration abilities.

6. CONCLUSIONS

Looking forward, this study serves as an initial step in understanding trainee teachers' perception on their level of Internet usage in information seeking activities. Although the study provides meaningful implications on using Internet to support learning in teacher training institute, the need to further explore on the effectiveness of ICT integration is yet to be explored. In addition, quantitative data on trainee teachers' academic performance might also be used as an evaluation tool to test the effectiveness of using ICT as a strategy in their pre-service training programs. Given both the trainee teachers' perception on Internet and barriers they faced in using Internet, future research is needed that directly explores the effectiveness of various methods they apply in information seeking activities through the Internet. Additionally, this study also describes the high level of Internet usage among the trainee teachers. Therefore, research is needed that accounts for what occurs during the sessions where they explore the Internet and how the situations potentially influence their high level of Internet usage even though their Internet access was limited in the institution.

Findings from this study also have added to literature by which comparing computer usage and Internet usage. This study indicated that computer usage influenced participants' perception on their Internet resourcing activities. Hence, computer ownership could possibly be a factor which influences the level of Internet usage among the trainee teachers.

In conclusion, the research indicated positive acceptances of Internet usage as a tool to search for information among the trainee teachers in Malaysia. Yet, the research underscores the significant roles for training institutions to enhance the quality of Internet applications and infrastructure being provided to the trainee teachers. Improving the quality of Internet access is required to make the benefits of ICT training being provided to the trainee teachers. In line with the evolving technology in education, it is hoped that trainee teachers will be adequately trained and ready to serve the nation by effectively incorporating ICT into their teaching materials.

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