DESIGN OF GUIDELINES ON THE LEARNING PSYCHOLOGY IN THE USE OF FACEBOOK AS A MEDIUM FOR TEACHING & LEARNING IN SECONDARY SCHOOL

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ABSTRACT
Use of Facebook in education is an innovation that is very suitable for getting the benefits of ICT to improve the quality of learning in Malaysia. Although Facebook is much applied in the teaching and learning process, no guidelines exist in Malaysia as a reference for teachers to develop teaching and learning effectively with Facebook. This study is aimed at developing a design for guidelines on the learning psychology in the use of Facebook as a medium for teaching and learning in secondary school. This research is a quantitative study using the Fuzzy Delphi Method. A design for guidelines on the learning psychology in using Facebook as a medium for teaching and learning has been developed to serve as a guide for teachers so that their teaching and learning on Facebook can become more attractive and effective.

Keywords: Facebook, Learning Psychology, Fuzzy Delphi Method, Educational Technology

INTRODUCTION

Based on the data released by internetworldstats.com, Malaysia's population as at February 2013 reached 28.859 million people; out of these, a total of 13.085 million people are Facebook users.

According to statistics released by SocialBakers.com, students aged 18-24 years and 25-34 years are the two biggest users of Facebook in Malaysia, accounting for 33.6% and 31% of users respectively. The class of students aged 13-17 years rank as the third biggest users of Facebook in Malaysia, namely 14.1%. In the beginning of 2013, Malaysia ranked 18th out of total Facebook users around the world.

It is known that Facebook is so popular among pupils and students. This popularity should be leveraged by educators to take advantage of Facebook as a tool that can contribute to the quality of education in Malaysia. This is because Facebook holds potential benefit for students, especially in overcoming low motivation (Mazman & Usluel, 2010).

The fact that Facebook played the main personal and social roles in daily life of students has led some educators to use it as a primary site for student learning. Facebook is built with many desirable features of an effective educational technology in the use of reflective elements, and peer feedback mechanism so suited in the context of social learning (Mason, 2006). Facebook has features offering educational experiences that build connectivity while maintaining privacy and security (Blatter & Fiori, 2009).

Facebook is said to enhance teacher-student interaction by web-based ommunication. Many research studies have been done on Facebook and the increased academic achievement among Facebook users. As a creative teacher, the teacher should take advantage of ICT development, including social sites such as Facebook and Twitter which are becoming a craze for students, to improve teaching methods (Rosaffari & Shabariah, 2011).

Although Facebook gives a lot of benefit to teachers and students, there is no guide as a reference for teachers to develop a learning environment in social networking sites such as Facebook. Since a study conducted by researchers on guidelines for Facebook use in education is still lacking in Malaysia, this study is carried out; it is hoped that the findings can be a source of reference for teachers and researchers in future. It is also hoped that this study will contribute to the diversification of effective teaching methods.

The Needs of Design Guidelines on the Learning Psychology In The Use Of Facebook As A Medium For Teaching & Learning

Applying the psychological aspects of teaching media in Facebook is very important to produce effective teaching and learning using learning theory. This is because teaching strategies or methods present in the design of learning in Facebook as a medium for teaching and learning is based on these theories. This statement is supported by Bucci, Copenhaver, Lehman, and O'Brien (2003) who stated that technology integration into learning should be appropriate to the source, goal-based learning and learning theories. According to them, if technology use does not take into account the theoretical foundations of learning, it does not help to meet learning goals.

According to Okojie, Olinzock, and Okojie-Boulder (2011) teachers need to understand the pedagogical principles governing technology use in teaching and learning. This is because it will be crucial for teachers to see technology in education as part of their pedagogy. Thus they encourage teachers to see technology integration from a broader perspective; this is because teachers use technology aims to support and facilitate teaching.

The findings of Rafiza and Maryam (2013) suggest that a low understanding of the psychological aspects leads to a lack of application of this aspect by respondents in developing multimedia-based instructional media. Similarly, the findings of media content analysis show the development of psychology is not applied to the material. This suggests that teachers do not realize the importance of learning theories in designing learning materials. Development of teaching and learning based on the latest technology such as Facebook should also take into account the role of learning theory in the development process. Thourbun (2004) supported this view by stating that the technology will have a positive impact if the teachers know the right way to integrate elements of pedagogy and learning theory in producing digital teaching and learning materials.

Constructivism Learning Theory

Constructivist theory emphasizes the importance of knowledge, beliefs and skills brought by an individual to the learning experience. It also recognizes the construction of new understanding as a combination of prior learning, new information and willingness to learn (Ormrod, 2008). In addition, social constructivism acknowledges the role of culture in the construction of knowledge (Pountney, Parr, & Whittaker, 2002).

The proposed guidelines in designing instructional multimedia applications proposed by Jamalludin Harun and Zaidatun Tasir (2003) have been modified by the researchers. According to them, theory of constructivism can be used in multimedia applications because using problems that occur in everyday life in the teaching and learning process is encouraged in constructivist teaching and learning. In addition, the emphasis on divergent thinking also applies. Therefore, students should be guided by the teacher or the learning material provided for the understanding of a concept from multiple perspectives in order to expand their thinking. The concept is easy to explain in a learning environment that leverages the use of technologies such as multimedia and social networking sites such as Facebook.

Jamalludin Harun and Zaidatun Tasir (2003) noted that constructivist theory also provides guidelines and principles for consideration when developing a technology-based learning environment. One set of guidelines is to provide authentic learning environments presented in a meaningful context (Ally, 2004; Brown, Collins, & Duguid, 1989; Cognition and Technology Group at Vanderbilt, 1992). In the context of learning through Facebook, students will be guided to actively participate in the learning environment provided for solving problems.

Constructivist theory also involves knowledge or intelligence that guides and structures the learning process. On the other hand, situations, and other amenities are to be provided to stimulate students to use their cognitive potential for optimization (Ally, 2004; Scardamalia, Bereiter, McLean, Swallow, & Woodruff, 1989) and is able to meet the individual learning needs as well as providing social activities. Social sites like Facebook offer facilities to encourage social activities such as private message facility, discussion forums, electronic smart partnerships and so on. This in turn enables students to work cooperatively and share ideas while challenging their thinking through discussion activities.

Teachers are suggested to provide learning materials to encourage pupils to develop their own knowledge. Teachers should also emphasize active learning among students. This can be done by discussion tools. The discussion method using Facebook can activate the learning environment and enhance student interest (Rossafri Mohamad & Shabariah Mohamad Shariff, 2011). According to Rossafri Mohamad and Shabariah Mohamad Shariff (2011) learning using discussion method has advantages over other methods. This is because the discussion method is applied in a student-centered learning environment and can provide opportunities for students to plan their own learning.

OBJECTIVES OF THE STUDY

Based on the research problem statement, this study is based on the following research objective:

a) Identify the characteristics of the domain of the learning psychology required in Facebook as a medium for teaching and learning in secondary school.

RESEARCH QUESTION

Based on the research objective, this study was conducted in order to answer the following research question:

a) What is the domain of the learning psychology required in Facebook as a medium for teaching and learning in secondary school?

THE RESEARCH METHODOLOGY

This study aims at developing a design for guidelines on the learning psychology in the use of Facebook as a medium for teaching and learning in secondary school. The methodology of this study is aimed at answering the research question.

The design of this study is based on the fuzzy Delphi method (Chang, Hsu & Chang, 2011). In this study, researchers used questionnaires as a research instrument. The questionnaire is designed to identify the learning psychology domain characteristics required by Facebook as a medium for teaching and learning. The characteristics of the domain will be identified by distributing questionnaires and responses will be analyzed using a Fuzzy Delphi technique to obtain a consensus view among experts selected.

According to Adler and Ziglio (1996), the appropriate number of experts in the Delphi method is between 10 and 15 if there is a high degree of uniformity among the experts. While Jones and Twiss (1978) suggest as much as 10 to 50 specialists.

In this study, the researcher will select a total of 30 experts. The samples used in this study are expert teachers, university lecturers, lecturers in teacher training colleges and ICT experts. Rationale for sample selection is based on the skills and knowledge they have in pedagogy and technology. Respondents can voluntarily cooperate in ensuring the success of this study. Table 1 shows the number of selected experts in the field

Table 1: *The Number of Experts in Each Field*

Field	Number of Experts
Expert teachers	15
University lecturer	5
Lecturers in training teachers college	5
ICT experts	5

The sampling process will involve the use of a questionnaire distributed to the experts. Among the criteria required to become experts in this study are;

1) The expert must have at least a bachelor's degree in their respective fields.
2) The expert has expertise in the field of IT or technology education for at least five years.

Or

3) The expert must have experience in their field for at least ten years.

DATA ANALYSIS

Table 2 shows the threshold (dm, n) for each item based on the expertise and the overall percentage threshold for the consensus group of experts on the psychological constructs of learning. Overall, based on a percentage of the experts agreed to show all items agreed upon by experts.

Table 2: *Threshold Value and Percentage Consensus by Experts on Psychological Learning Constructs*

EXPERTS	LEARNING PSYCHOLOGY CONSTRUCT				
	A1	**A2**	**A3**	**A4**	**A5**
1	0.09	0.07	0.12	0.09	0.06
2	0.09	0.07	0.12	0.09	0.06
3	0.09	0.07	0.12	0.21	0.06
4	0.09	0.07	0.12	0.09	0.06
5	0.21	0.07	0.18	0.21	0.24
6	0.21	0.23	0.18	0.21	0.24
7	0.09	0.07	0.18	0.21	0.24
8	0.21	0.23	0.18	0.09	0.06
9	0.09	0.07	0.12	0.09	0.06
10	0.09	0.07	0.12	0.09	0.06
11	0.09	0.07	0.12	0.09	0.06
12	0.21	0.07	0.18	0.09	0.24
13	0.09	0.07	0.12	0.09	0.06
14	0.09	0.07	0.18	0.21	0.06
15	0.09	0.68	0.12	0.09	0.06
16	0.09	0.23	0.18	0.09	0.24
17	0.21	0.07	0.18	0.09	0.24
18	0.09	0.07	0.12	0.09	0.06
18	0.09	0.07	0.18	0.09	0.06
20	0.09	0.23	0.12	0.09	0.24
21	0.09	0.23	0.12	0.09	0.24
22	0.09	0.07	0.12	0.09	0.06
23	0.21	0.23	0.18	0.21	0.67
24	0.21	0.23	0.18	0.21	0.24
25	0.09	0.07	0.12	0.09	0.06
26	0.09	0.07	0.12	0.09	0.06
27	0.09	0.07	0.12	0.21	0.06
28	0.21	0.23	0.12	0.09	0.06
28	0.21	0.23	0.12	0.09	0.36
30	0.09	0.07	0.18	0.21	0.06
DEFUZZIFICATION	**19.80**	**19.40**	**20.40**	**19.80**	**19.20**
Percentage consensus expert group to construct learning Psychology: 98.6%					
**** Value ($d_{m,n}$) for each ≤ 0.2 = 148 items, then (148/150) * 100% = 98.6%***					

Table 3 shows the defuzzification scores for the domain characteristic learning psychology. Based on the defuzzification score the position of each item according to priority is given; this will enable every teacher to focus on the relevant domain characteristics in the process of teaching and learning using Facebook.

Table 3: *Scores Defuzzification for Learning Psychology*

Item	Domain Characteristics	Defuzzification value	Ranking
A1	Driving students to actively participate in learning.	20.40	1
A2	Use of the facilities provided by Facebook such as Chatroom to allow students to learn cooperatively.	19.80	2
A3	Emphasis on brainstorming.	19.40	3

A4	Provide strategies that focus on actual experiences that occur in human life.	19.20	4
A5	Providing learning materials that encourage students to form their own knowledge.	19.00	5

As a result of the defuzzification score for each domain characteristic of Learning psychology appears to be on the value agreed upon by experts. It is hereby found all of the items can be used in the process in designing guidelines on the learning psychology in the use of Facebook as a medium for teaching and learning in secondary school. Table 3 shows that driving students to actively participate in learning with the defuzzification score 20:40 is in the first ranking. This is followed by use the information provided facilities provided by Facebook such as Chatroom to allow students to learn cooperatively with the defuzzification score of 19.80; next in rank is emphasize on brainstroming with the defuzzification score of 19:40; this is followed by the item provide strategies that focus on actual experiences that occur in people's lives with the score of 19:20 and the last, provide learning materials that encourage students to form their own knowledge with a defuzzification score of 19.00.

DISCUSSION AND CONCLUSIONS

After the defuzzification score analysis was conducted, the researchers found that the characteristics of a domain that has high defuzzification score is concerned with driving students actively involved in learning with the defuzification score of 20.40. In the context of learning through Facebook, students will be guided to actively participate in the learning environment if space for problem solving is provided. According to the researcher, when teachers present the theme or issue on Facebook this will drive students to collaborative activities or projects. This is because, according to Jamalludin Harun and Zaidatun Tasir (2003), the theory of constructivism provides guidance and principles that should be considered when developing a technology-based learning environment. One set of guidelines is to provide authentic learning environments presented in a meaningful context (Ally, 2004; Brown et al., 1989; Cognition and Technology Group at Vanderbilt, 1992).

The second characteristic is the domain use the facilities provided by Facebook such as Chatroom to allow students to learn cooperatively with the defuzzification score of 19.80. The researchers argue that social networking sites such as Facebook are suitable for encouraging social activities such as private message facility, discussion forums, electronic smart partnerships and so on. This in turn enables students to work cooperatively and share ideas while challenging their thinking through discussion activities. This opinion is supported by Rossafri Mohammad and Shabariah Mohammad Shariff (2011) who stated that the discussion method using Facebook can activate the learning environment and enhance student interest. They said learning to use the discussion method has advantages over other methods. This is because the method is applied to a discussion of student-centered learning and will provide opportunities for students to plan their learning.

The third characteristic is the emphasis on brainstroming that has the defuzzification score of 19:40. Jamalludin Harun and Zaidatun Tasir (2003) noted that the theory of constructivism can be used in multimedia applications to generate the divergent thought. Therefore, the researcher suggests that students taught by teachers or learning materials provided on Facebook are able to develop understanding of a concept from multiple perspectives in order to enhance their thinking.

The fourth characteristic is to provide a strategy that focuses on the real experiences that happen in people's lives with the defuzzification score of 19:20. This opinion is in line with that of Jamalludin Harun and Zaidatun Tasir (2003) stating that the theory of constructivism can be used in multimedia applications because the use of problems that occur in everyday life in the teaching and learning process is being encouraged in constructivist teaching and learning.

The last characteristic is to provide learning materials that encourage students to create their own knowledge with defuzzification score of 19:00. This opinion is supported by constructivist philosophy which states that the constructivist theory of knowledge or intelligence does not involve a rigid or structured learning process. On the other hand, situations, and other amenities are to be provided to stimulate students to use their optimal cognitive potential (Ally, 2004; Scardamalia et al., 1989). Therefore, the researcher suggests that teachers provide learning materials in the form of encouraging pupils to develop their own knowledge. Teachers should also emphasize active learning among students.

Thus, referring to expert assessment, constructivist principles are best suited for developing a design of guidelines on the learning psychology in the use of Facebook as a medium for teaching and learning in secondary school.

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