Computers & Education 69 (2013) 356–368

Contents lists available at ScienceDirect

Computers & Education

journal homepage: www.elsevier.com/locate/compedu

Pattern of reflection in learning Authoring System through blogging

Siti Khadijah Mohamad, Zaidatun Tasir*, Jamalludin Harun [1], Nurbiha A. Shukor [2]

Educational Science, Mathematics & Creative Multimedia Department, Faculty of Education, Universiti Teknologi Malaysia, UTM Johor Bahru, 81310 Johor, Malaysia

ARTICLE INFO

Article history:
Received 10 January 2013
Received in revised form
26 July 2013
Accepted 29 July 2013

Keywords:
Applications in subject areas
Improving classroom teaching
Media in education
Teaching/learning strategies
Interactive learning environments

ABSTRACT

This research study aims to identify student's perceptions regarding the use of blogging, the pattern of reflection involved in learning Authoring System through blogging and student's performance in tests based on the reflection's pattern. Sixteen students who registered for the Authoring System subject participated in this study. It was conducted using quantitative approaches, through survey and pre-experimental design of one group post-test type. The instruments used were questionnaire, performance test and blog contents, where tutors and students posted messages and comments on the blog during the course. The results showed that the students' overall perception regarding the educational benefits of writing a blog and reading other students' blogs and comments was positive. Students also moderately agreed that they had difficulties in engaging in the reflection through blogging. It was also found that blogging indirectly improved the students' performance in the test. Through blog content analysis, the dominant type of reflection was monologue. However, the results from the data mining analysis showed that the students used reflective conversation and monologue type of reflection to achieve Grade A in learning Authoring System. It shows that students require deep and critical reflection to perform better in the subject.

1. Introduction

A learning journal is an essential medium for reflection to support the particular content of educational programs. All adults reflect and sometimes it occurs only when the environment is encouraging for reflection, such as an incentive or some emphasis on the guidance of reflection (Moon, 2006).

Since the late 1990s, the theory and practice of reflection has made a major impact in the educational environment especially in language learning but less attention has been placed on learning computer subjects. In addition, the result of reflection (which is likely to be reflective) is often assessed by tutors (Lamy & Goodfellow, 1999). This can actually motivate some students in writing reflective materials as it will be frequently viewed by their tutor (Moon, 2006). This factor may influence the nature of reflective learning (Boud & Walker, 1993).

Moon (2006) says that reflection is a form of thinking, as it often involves complex issues and may generate difficult consequences. This is in line with Dewey's (1933) thought on reflection that thinking must involve "a state of doubt, hesitation, perplexity and mental difficulty". Authoring System is a subject which can be considered complex since it integrates the use of scripting languages such as Action Script. Action Script tutorials are available over the Internet as this language is an open source however, creating a simple animation is not as simple as it seems. Often there is a need to check for errors when we do certain things that may generate undesired result (Reynolds, 2008). Handling the errors is not an easy task and for those who are new to scripting might find this very troublesome. The availability of reflective learning is helpful in facilitating students in learning the Authoring System subject effectively as they are encouraged to actively share ideas, experiences and perspectives on the emerging issues related to the Action Script topic especially in discussing the concepts and errors. The interaction, personal opinion or knowledge publishing provides the possible pathway for reflection which leads to deep learning (Boud, 2001).

* Corresponding author. Tel.: +60 19 7255786; fax: +60 7 5534884.
E-mail addresses: dieja_80s@yahoo.com (S.K. Mohamad), p-zaida@utm.my, zaidatun@gmail.com (Z. Tasir), p-jamal@utm.my (J. Harun), nurbiha@utm.my (N. A. Shukor).
[1] Tel.: +60 19 7559408; fax: +60 7 5534884.
[2] Tel.: +60 17 3745760; fax: +60 7 5534884.

0360-1315/$ – see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.compedu.2013.07.031

For the purpose of nurturing reflection, asynchronous discussion is more appropriate as compared to synchronous discussion due to the flexibility that the learners have to think carefully about the discussion and record exchanges (messages and replies) which can be accessed repeatedly (Lamy & Goodfellow, 1999). Synchronous communication technologies such as live chats are ineffective because they allow little time for thinking (Bartlett-Bragg, 2003).

Educators should be aware of how the new technologies can fit with flexible learning. Blogging is among the technologies that promise the flexible and accessible opportunities for student-centered practices (Glogoff, 2005). A blog is an online journal where users can update the posts, in their own words (Matheson, 2004). Blogging is a useful approach for learning Authoring subjects as it can stimulates reading and motivates learning, builds the community, makes hyperlinks to other resources and provides a learning space. A blog is an appropriate platform for giving such motivation provided that one can read and make comments that lead to discussion about shared interests and individual differences. Engaging actively with blogs gives students an opportunity to read issues and deepen the learning experiences through reflection (Yang, 2009). Studies have shown that the influence of Internet access has caused a number of students to read comprehensively (Liaw, Chen, & Huang, 2008; Rodzvilla, 2002; Stiler & Philleo, 2003).

Student's reflections through blogging can be categorized based on several patterns. The social interaction model as proposed by van Lier (1996) applied the social-interactionist view of learning for the discussion of the language learning by categorizing communications that occur between the lecturer and learners. It involves monologic, dialogic and fully conversational talk. According to Lamy and Goodfellow (1999), the model proposed by van Lier (1996) has never been tested to the analysis of online interaction exchanges. Thus, the social interaction model was adapted to study the role of online learning reflection to facilitate learning. Lamy and Goodfellow (1999) used the terms "monologue", "dialogue", "social conversation" and "reflective conversation" in their study.

To encourage the students to reflect on their learning, instructors need to scaffold the learning process. One of the types of instructor scaffoldings that can be used is metacognitive scaffolding. In education, the goal of metacognitive scaffolding is for the students to become independent, self-regulating and less teacher-dependent. In other words, the metacognitive scaffolding aims at helping students to control and monitor their own learning (Azevedo & Hadwin, 2005) as it can develop higher-level cognitive strategies (Hartman, 2001).

Therefore, the metacognitive scaffolding strategies through blogging were implemented in the study to trigger student's reflection and then student's patterns of reflection were analyzed based on the model proposed by van Lier (1996), which was further investigated by Lamy and Goodfellow (1999).

2. Theoretical background

2.1. Social constructivist learning environment and blogging

Social constructivist learning environment (SCLE) is the environment that represents the social constructivism theory. It designates a way of knowing where learners are able to build new comprehension and knowledge during the social interaction with peers (Wink & Putney, 2002). Vygotsky (1978) stated that a person can develop deep understanding through collaboration and from more knowledgeable peers rather than from his/her own ability. SCLE serves as an open platform where the students work and learn collaboratively and it does not manage, control and track users which is totally different from the concept of the learning management system (Hart, 2009).

In SCLE, learners are invited to activate their prior knowledge and construct new information based on what they already know (Driver & Easley, 1978). Apart from that, the social dimension of learning enables students to make meaning of the world via personal and society processes (Driver, Asoko, Leach, Mortimer, & Scott, 1994). They are given opportunities to test new knowledge claims with peers and link these new ideas with personal experience and existing knowledge (McRobbie & Tobin, 1997). Finally, students can identify, express and exchange ideas, reflect on other student's views, organize their own views and negotiate shared meanings (Prawat, 1993).

SCLE is suitable for the integration with an online setting such as a blog. Blogging that promotes the social constructivist environment acts as a place where students can reflect and use the tool and the available information to meet their learning target and perform problem-solving activities (Wilson, 1996). Some of the characteristics that fit blogging within SCLE are that it acts as a platform for stimulating reading and giving motivation and students can widen their learning experience through reflection and dialogue. Blogs also enable students to build a learning community as they share the same interests. The use of hyperlinks enables new readers to follow earlier discussion and can make the blog more interesting and lively with pictures or sounds (Efimova & Fiedler, 2003). Blogs also encourage a learner-centered environment and students can learn at their own pace (Efimova & Fiedler, 2003).

2.2. Metacognitive scaffolding

The most effective metacognitive instruction involves both theory and practice. Learner must be exposed to cognitive processes and strategies that is used as metacognitive knowledge. Metacognitive knowledge involves the reader's awareness, monitoring, and guidance of his/her cognitive processing when construction is meant from text (Garner, 1990; Nist & Holschuh, 2000). Instructors are therefore encouraged to engage students in effective learning processes and help them regulate their thinking by integrating the metacognitive strategies in learning that is necessary for academic success. Students who engaged in metacognitive activities were improved in learning while the weaker students were positively affected as compared to better students from such activities. Unfortunately, many students failed to directly engage in metacognitive thinking unless they were shown the ways to do so through prudently designed instructional activities. Thus, it is vital to apply metacognitive support in the design of the learning environment.

According to Rimor, Reingold, and Kalay (2008), an appropriate response from instructor can transform the course into a learning environment where students are likely to learn through reflective and metacognitive processes. An injection of metacognitive scaffolding in an online course will promote student's metacognitive reflections. The metacognitive scaffolds that are injected by the instructor include " presenting the rationale for the task, fostering the integration across various course readings and course objectives, supporting reflective writing, differentiating between conclusion, fact, opinion and hypothesis, supervising text comprehension, focusing on the process of learning and encouraging interaction among participants ". All of these scaffolds categories were found to make students to reflect on their task and therefore contributed to their experience as a community of learners.