



Application of Collaborative Learning Theory as a Learning Feature in iREAD UKM: A Conceptual Framework

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Abstract

Online reading is an important component of academic activities conducted by learners, especially at tertiary level. Therefore, it is essential to understand how learners read, assimilate, manage and construct knowledge from online texts or learn from fellow readers. The present study aims to design an experimental online reading system, which will allow for an organized monitoring of students' learning and reading activities. The proposed system, named iREAD-UKM (Interactive Reading Across Academic Discipline), will model the types of online reading strategies that ease the process of reading academic texts into specifications for a support system to assist in online reading. The final product will be an innovative online reading system based on the specifications. In short, the proposed system will present an enhanced interaction for online reading in an e-learning environment. The focus of this paper is on how the application of collaborative learning theory was employed to integrate the online forum (a learning feature in the system) in order to facilitate and scaffolds the production of collective ways of seeing, acting and knowing, and production of shared knowledge among learners. Data based on interviews conducted with lecturers from the social sciences, sciences and medical field at UKM, to find out about the type of online reading materials and tasks that these lecturers assign to their students was also used to decide on the system specification.

1 Introduction

The increase use of technology as a tool for teaching and learning at tertiary level means that students read plenty of materials than printed materials. Without doubt, online reading is an important academic activity conducted by learners, especially at tertiary level. Reading on paper is obviously different from reading on screen, hence, this requires some explanation and understanding of how the reading process is done. In addition, the advent of technologies have introduced new ways of reading and getting meaning from online resources that are constructed as new forms of knowledge representations, developed as new hypertexts. These hypertexts require students to read in a multisequential and exploratory fashion, producing "hypertextual" criticism (annotating, cross-referencing, and linking texts), and communicating among themselves throughout the reading and writing process. It is evident then that new technologies has changed the concept of reading from monomodal or print-based texts to conceptualization of learning and literacy practice to 'multiple literacy practices' or 'multiliteracies' skills.

Therefore, an online platform which provides support for learners to read, assimilate, manage and construct knowledge from online texts and from fellow readers would help teachers and lecturers understand how learners read and process online materials. Most available e-learning platform functions as 'content silos' where materials are uploaded for consumption by students with very little support or even directions as to how these contents should be 'consumed'. In addition, lecturers encounter problems in helping to ease students' reading problems because there is no online reading system that can track students' reading and learning process. This is especially essential with groups that may require attention, where reading is concerned. Prior to the present study, a study by the same group of researcher was conducted to investigate this matter (Afendi Hamat et al., 2009; Nor Fariza et al., 2009; Nadzrah et al., 2009; Noorizah et al., 2009; Afendi Hamat et al., 2010). The study developed a prototype of an online reading system, named i-ELLS (interactive english language learning system) was designed based on identified reading strategies of second language learners (L2) at tertiary level. The e-literacy tools which



are incorporated into the system are My Notes, Forum/Discuss, Video Journal, Dictionary and Translation Tool.

Based on the results of i-ELLS study, an enhanced proposed iREAD-UKM will be developed, which has improved e-literacy tools to track students' reading process and product. With i-READ UKM, lecturers can provide appropriate remedial work (a part of the design specification in the system), for students who need it. The proposed system will present an enhanced interaction for online reading not available in any e-learning systems to date. The system will be designed with advanced API (Application Programming Interface) that allows it to stand alone or be integrated as a 'plugin' into any learning management systems (LMS), such as iFolio (elearning management system used by UKM), therefore adding much needed value in terms of reading support.

1.1 Collaborative Learning Theory

Theories on collaborative learning reflected a dominant position in cognitive psychology and in artificial intelligence, in the 1970s and early 1980s. During this period of time, cognition was seen as a product of individual formation processors, while social interaction was seen more as a background activity which supports cognition. The principles of collaborative learning are based on the theories of Dewey (2009), Vygotsky (1980), Benjamin Bloom (1956), whose work focused on how students' learning process has led educators to develop more student-focused learning environments that put students at the center of instruction. This principle is the foundation of collaborative learning. Smith and MacGregor (1992) define the term as follows:

“Collaborative learning” is an umbrella term for a variety of educational approaches involving joint intellectual effort by students, or students and teachers together. Usually, students are working in groups of two or more, mutually searching for understanding, solutions, or meanings, or creating a product. Collaborative learning activities vary widely, but most center on students' exploration or application of the course material, not simply the teacher's presentation or explication of it. (p. 1)

1.2 Online Discussion Forum AND Collaborative Learning

According to Hamat and Embi (2009), online discussion forums are one of the oldest and most accessible modes of asynchronous communication on the Internet. Where learning is concerned, online forum facilities and platforms supplement conventional methods of giving lectures and conducting tutorials for these forums provide opportunities for students to interact beyond the four walls of the classroom. In fact, these online resources also allow students to network with other students and lecturers outside of traditional class times and at the convenience of the participants. Arnold et al. (2005) assert that the use of discussion boards contributes to building viable online learning communities that allow learners to support each other. For students learning via the distance-learning mode, an online discussion forum can be the primary means of communication with their lecturers and classmates. Montero, Watts, & Garcia-Carbonell (2007) state that online discussion forums have been used to promote different modes of learning that can lead to enhanced educational outcomes for students. Students engage in discourse on a topic for which they are motivated (intrinsically or extrinsically) by common goals. The same group work principle, employed in classrooms can be applied to collaborative learning in online discussion forums. These forums do not merely involve learners through the posting of questions to one another or to the lecturer.

1.3 Design Of I-read UKM

In order to decide on the types of online reading materials and activities which can be incorporated into the system, interviews were conducted with lecturers from the social sciences, sciences and medical field, to obtain data about the type of online reading materials and tasks that these lecturers assign to their students. Upon analysis of the interview data, open resources and online reading materials (websites, ebook and journals) are frequently referred to as supplementary materials. The assigned tasks included online discussion, filling in diagrams and charts, problem solving through case studies, short quizzes, use of excel, video presentation and others. The types of tasks assigned depend on the topics and the field of study. For instance, students from the faculty of science and technology are required to fill in excel sheets, fill in diagrams and charts, complete quizzes, draw a flowchart (using a particular software), while students



from the faculty of social sciences are asked to discuss online, do summary, do video presentation and problem solving, among many other tasks.

To reiterate, this paper focuses on online forum. Before any online discussion is assigned, the interview data revealed that the lecturer either assigned students to read, posed questions based on the reading texts or posed questions based on a particular topic which has been lectured upon. If the lecturer decides to use a reading text, the lecturer then decides on which part of the text does she or he wants to have on every screen. The reading text is similar to a chapter in a book, with sub headings to assist reading comprehension. The excerpts (excerpt 1, 2 and 3) shows that online collaborative learning is part of the learning process employed in teaching and learning (the excerpts are based on the original interview data).

Excerpt 1

Kita beri sebagai satu group assignment kepada student. Student can use online facility dalam i-folio untuk discuss.

(We give group assignment to student. Student can use online facility in i-folio to discuss).

Excerpt 2

Student memang diberi problem solving question yang kita post dalam online. Ini kita buat secara individu atau group. Student juga discuss tentang video presentation secara kumpulan online. This help lecturers untuk monitor pelajar.

(Students are given problem solving questions which we posted online. The questions can be answered individually or in group. Students also discuss video presentation in group, online. This help lecturers to monitor the students).

Excerpt 3

Saya beri material untuk baca. Kemudian ada soalan bentuk problem solving, application. Ikut Bloom's taxonomy. Ada pelajar yang bincang online untuk selesaikan masalah. Kadang-kadang mereka buat dalam group.

(I give materials to read. Then there are problem solving questions and application. This followed Bloom's taxonomy. There are students who discuss online to solve the problem. Sometimes they do this in group).

It is evident that the collaborative learning is practiced in the teaching and learning process. The learning environment which encourages students to talk through the material with each other in making sure all group members understand, will certainly help students to accomplish the task given to them. Furthermore, students who are shy to contribute in class or may not be able to understand the lesson are also provided an environment which can motivate them to learn about the material when they work together, than when students compete or work alone individualistically.

1.4 Conclusion

To reiterate, i-READ UKM is designed to monitor student's reading process and product. Therefore, it is apt that in designing the system, consideration is given to facilitate teaching and learning process. The collaborative learning theory is employed as the conceptual framework in designing the online forum platform because this approach provide students with a platform to foster and encourage collaborative learning. This will also help teachers to foresee if students have any problems, thus, allowing appropriate remedial work for students who need it.

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