Online Learning in Higher Education in Malaysia: A Case Study of Students' Future Expectations

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Abstract

This paper reports the results of a study concerning of Malaysian undergraduate science physics students' and pre-service science teachers' perceptions of learning through online. One of the main focuses is to seek what is the students' feedback after exposed with online learning particularly their respond of future expectation, assessment and evaluation. Hundred and two (102) students were involved in this study which consists of 61 students from the School of Science and Technology (SST, science student) and 41 students from the School of Education and Social Development (SESD, pre-service science teachers). Both programmes were offered in University Malaysia Sabah, Malaysia. The students followed all learning activities for sixteen weeks through online. The online learning environment (i.e., learning management system, LMS) was used as the main medium to delivered learning process throughout the second semester of 2008/2009 academic year. Analysis of the open-ended questionnaire and interview data indicated that a common student suggestion was that the designer should i. Use videoconference while chatting in chat room; ii Improve Internet facilities within UMS; and also iii. Incorporate this approach into other physics course.

Keywords: learning outcomes; online learning

Introduction

Online learning is comparatively new in University Malaysia Sabah (UMS). Though in early 2000, UMS has been introduced with an electronic teaching aid such as Blackboard and several computer aided instruction as one of the teaching and learning tool, both from School of Engineering and Information Technology (SEIT) and School of Education and Social Study (SESD), until now the usage of these teaching aid seems not been utilised at all or at least part of it. In School of Science and Technology (SST), a very small number of lecturers prefer to use online learning as the teaching and learning medium. They were really comfortable with the existing medium (i.e., face-to-face lecture based) to deliver course syllabus and content objective throughout semester. Ironically Malaysian government through the nine challenges in Vision 2020 that must be achieved in order to be a well-developed, advanced and higher income country in 2020 had stated through the 6th challenge that Malaysian citizens must try to adapt with these cutting edge technology and must also contribute to the science and technologies civilizations. Additionally Malaysian Prime Minister also stated the Information Communication Technology (ICT) and education service are two main keys of the National Key Economic Area (NKEA), thus must be utilised very well in our daily life scenario to ensure the higher income economically and productivity country objectives can be achieved (Razak, 2010). Therefore, as a rapid developing country, Malaysia really need to explore the potentials of these NKEA especially in higher leaning institution in order to reply the Prime Minister's call.

Department of Information Technology & Communication (DITC) Media & Educational Technology Unit (formerly known as Multimedia and Educational Technology Unit, METU) was then established in UMS to ensure the nation's vision and mission in higher education particularly in UMS can be achieved.

The main objective for DITC is to cater the service and facilities in Information Communication and Technology (ICT) such as computer and software component to the university including the teaching and learning aspects, besides it is also deliver digital information across all academic disciplines for research, administration and management of the university activities (Media & Educational Technology Unit, 2012).

Therefore this study was to address an issue concerning about online learning and what was really happen when the online learning being implemented in UMS. It is critical for researchers to considerate many factors before implementing online learning fully. As stated by Kišićek, Lauc and Garić (2012) understanding students' preferences can guide to a better learning instruction through online. Additionally the use of ICT in modern teaching aid (e.g., internet technologies; web portals; and multimedia software) contribute positive output to parts of teaching and learning process such as, cooperation amongst students and the learning becomes more interactive (Mandic, Dzinovic, & Samardzic, 2012). It also might be one of the powerful tools to lesser lectures' teaching workload. Thus, it is really a need for the researcher to look into the online learning aspect. The main objective was to bring a different way of learning approach compare to the current practice (i.e., face-to-face pedagogy). Thus the researcher took steps in blending online learning in a physics course. Students' perceptions after experiencing the online learning were gathered from an open-ended questionnaire and focus group interview. From here three main themes of learning outcome yielded in terms of students' future expectation, assessment and evaluation.

Methodology

The study was conducted throughout Semester two during the 2008/2009 academic year at University Malaysia Sabah (UMS), Malaysia. One hundred and two students were involves, which consist of sixty-one science physics students from Physics With Electronic Programme at the School of Science and Technology (SST), and another forty-one pre-service science teacher from Science Education Programme at the School of Education and Social Development (SESD). The samples undergone all learning activities in an online learning environment (i.e., learning management system, LMS) which acted as the main medium to support the full learning process throughout the semester.

The teaching and learning via online was conducted within 16 weeks. During the intervention, all assessment being delivered using the LMS organized by Department of Information Technology & Communication (DITC) Media & Educational Technology Unit (formerly known as Multimedia and Educational Technology Unit, METU) at the university. The researcher prepared the LMS where included relevance content of a physics course to fulfilled learning and teaching activities via online. All the learning activities were done online, and they need to check-in every week for the whole sixteen weeks as to replace the face-to-face lecture class. During the online learning process, besides discussing with facilitator regarding to their subject matter, they were able to do any learning activities such as searching extra information, knowledge and source independently by using their own personal computer. Besides, UMS's library also provides computers for students usage.Other source that they might useful in adding their knowledge is via Internet, interview lectures or tutors, from text books, observation or any other methods in sequence to find adequate information.

One compulsory activity that student need to do is the weekly meeting in chat room with the facilitator. In this chat room they argued, shared thoughts and most probably constructed their own thinking regarding to the particular problem or subject matter that become the main topic for the week. They also have the right and access to enter the forum room to post any inquiries or any ideas asynchronously. Additionally some linkages, sources and lecture's note also uploaded by the facilitator for them just to ensure the students did not lose their ways in sequence to find the suitable solution and just to give them the correct path in searching their resource. They had been given two weeks for each problem to solve before passing up, and there were five problems or subject matter need to be solved throughout the semester. This LMS system was using Moodle2007 course management systems.

The intention of this paper was to survey what is the Malaysian undergraduate Science Physics Students' (SST) and Pre-Service Science Teachers' (SESD) perceptions of online learning in three main parts: i. their future expectation;ii. what kind of assessment should be given; and iii. How the evaluation should be. Data were collected by an open-ended questionnaire and also from focus group interview.

Findings

This paper presents finding from students point of view on how an online learning, particularly in a physics course should be implemented. The main questions that were asked are what their future expectation from online learning is. From analysis of the open-ended questionnaire and interview data indicated that a common student suggestion was that the designer should *i. Use videoconference while chatting in chat room; ii Improve Internet facilities within UMS;* and also *iii. Incorporate this approach into other physics course.*

i. Use videoconference while chatting in chat room

A participant suggested that using videoconferencing might help them while doing their chat room activities such as discussion, elaboration, and even presenting their findings:

In my opinion, I know our technology is limited, but I suggest, videoconference will be more interesting. We just apply videoconference but have no lecture, I mean all of our team members, after we have discussed the problems and then after they find the solution they present it in front of the lecturer using videoconference (lecturer will just listen not participate in that presentation). (Student #15, Female, SST)

If we use the web cam also the conversation will be more interesting. (Student #17, Female, SST)

Using Yahoo Messenger (YM) or Skype also might help them learn in the future:

I have suggestions about the chat room, maybe we should use the more user friendly chat room like YM, Skype so that we can make our conference, use voice mail. Because I think it is better when we discuss something thru chat room we also can speak directly to other team members, because it is very hard for us to express our opinion only by the chat room and not accompany with verbal discussion. (Students #8, Female, SESD)

ii. Improve Internet facilities within UMS

Technical issues such as the Internet access and bandwidth within the university area need to be upgraded for student's and user's convenience and to improve the effectiveness of this approach in the future, as suggested by several participants:

Improve and upgrade the Internet connection. (Student #30, Male, SST)

Improve the poor Internet sources, than we can continue this PBL via online.(Student #17, Male, SESD)

iii. Incorporate this approach into other Physics Courses

Some participants suggested that this instructional design could be incorporated into other university courses, especially for those courses that need sources from outside the lecture room to learn:

I think we should incorporates this kind of program to the others physics course, for example optic. Because optic course involve al lot of nature and phenomena that we don't even know. So if the question about the natural phenomena comes out in the future we may be now being able to know what it even we are physics students is. So I think about the optics and also the electromagnetism these two subjects I think can join in PBL. Because this two course involve a lot of complex and interesting things that can allow us to think and learn more from this. (Student #12, Male, SST)

A participant also urged that this approach should be enforced fully in certain physics courses and would be interested to join this learning approach in the future:

Apply this PBL approach to other subject for the next semester like physics optic. Enforce it100% PBL assessment for PBL approach only in one particular course. Want to continue this PBL system (with enthusiastic). (Student #7, Female, SESD)

Discussion and Conclusion

Universiti Malaysia Sabah celebrating it's 20^{th} years of formation in 2014. Align with that there were also an urge and need to improve in every aspects of teaching and learning due to the rapid development of Information, Communcation & Technology (ICT). UMS definitely will not allow any delay on this. Thus, something must be done in order to strengthen teaching and learning process that aligns with the rapid development of ICT. However, the enthusiast of changing traditional way of teaching and learning to more modern way should not be take for granted. Researcher must consider and look into several issues before proposing any learning activities of T&L, specifically for science students.

From the findings, students prefer to add videoconferencing while chatting in chat room. Some of them thought that it will makes their discussion more easier where they can have mutual conversation and get connected easily and do learning activities such as discussion and present their findings. This is in line with Shamma et al. (2008) work where simultaneously video sharing online (i.e., videoconference) might help people fell closer and more connected to their peer friends. In this study, a participant suggested that using videoconferencing might help them while doing their chat room activities such as discussion, elaboration, and even presenting their findings:

In order to ensure the online learning activities can be done fluently, one need to ensure the Internet facilities are working properly and capable on cater consumer's demand within the institution itself. This is in line with Abel (2005) survey, where one of the factors on how higher education institutions succeed in Internet-supported learning are most closely correlated with their consistency of Internet-supported learning with institution mision and also competitive pressure to provide Internet-supported learning.

And last but not least some students also suggested that this approach of learning need to be incorporated into other physics course as well though many factors need to be considered. Agreed with this is Bates *et al*., (2007), where they developed an online material to support traditional learning teaching methods in a Physics course at the University of Edinburgh. They demanded that though online learning provides a modern approach to teaching and learning process it is not necessarily will give positive affect towards students' comprehension. Nevertheless it depends on how we structured the online learning that will contribute to the effectiveness of learning. Thus it really need thorough consideration in many factors.

Some additional input, where Kondratieva (2012) says that regular practice using on-line tutoring system might change students' personal meaning of the learning activity and consequently change students' attitude and work habit to be more serious and determine in their study. Nevertheless, she adds through online training is less influential in terms of other aspects such as raising students' interest in the subject. Another point and view by Simonova, Poulova, and Kriz (2011) suggest that material and technical requirements having been satisfied, strong attention must be paid to didactic aspects of instruction. It is essential for a student to be aware of his/her learning style, know what his/her strengths and weaknesses are and be provided a variety of instructional methods to choose the most suitable ones; and the e-application can support the process. In the days of fast technical and technological development, globalization, demand for further, lifelong education, the importance of education is increasing.

As a conclusion, online learning has become a common expression in higher institution of university education these days, Malaysia also is not exempted. If apply appropriately especially when it meet the requirements of students' needs, it might contributes to positive efficiency of the educational process, decreasing the amount of face-to-face instruction and strengthening the dimension of self-study and project activities. Thus it leads to the process of developing students' key competences. Therefore this paper gives some indicator and key points on how student sees the online learning, and what factors that should be considered if one would like to proceed with online learning particularly in physics course. However further research need to be done particularly in a concrete online structure thus can really contribute to students' satisfaction and may create a better environment of learning.

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