An Exploration Study On Blended Learning Experiences In A Public Higher Institution In Malaysia

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ABSTRACT

The advancement in information communication technology (ICT) has changed how people communicate with each other in both society and the business world. In higher education (HE), it has changed how stakeholders such as students and academics gain access to information. Academics need not carry a pile of books to lecture or print out dozens of handouts; research students no longer need to attend the library to renew books or to find a journal article. Instead, the Virtual Learning Environment (VLE), digital library, online journal articles and a variety of educational ICT are pervasive. Technological innovations impact on the learning and teaching experience in higher educational institutions (HEIs). Many universities have spent much effort and resources in attempting to respond to such changes related to the digital culture and move to blended learning approach. Blended learning, involves the combination of two fields of concern: technology and education. However, current literature shows less consideration on the potential disciplinary gap in the blended learning experience, as a result there is a paucity of evidence from institutional investigations. This study aimed to explore, analyse and compare the blended learning experience in higher education. The research is reflected in 3 questions: (1) What are the current blended learning experiences in the higher educational institutions in Malaysia? (2) How does the blended learning experience vary in different disciplines (social science-based academics and science-based academics)? (3) What are the reflections on the comparative experiences

in (1) and (2)? In addition, the research offers a contribution to knowledge that leads to the establishment of an underlying blended learning model in the later stage. The research aims for a notable shift from the conventional technological framework towards an insight into the blended learning principles underpinned by educational theory.

Keywords: *Blended Learning, higher education, information communication technology*

INTRODUCTION

One of the challenges faced by modern HEIs is to find out how to construct and deploy highly supportive learning environments which could be used to provide face to face (f2f) instructions, self-paced collaborating groups, and in a variety of locations and over a distance as required (Alistair, 1995). This could be realized in a blended learning setting. In the last decade, technology, such as online learning materials, discussion boards and e-assessment systems, blended with the conventional f2f education has been regarded as "blended learning". The Cambridge Advanced Learner's Dictionary defines education as "the process of learning and teaching"; and technology as "the practical, especially industrial, use of scientific discoveries".

Blended learning means the process of f2f learning and teaching events that are mixed with practical use of technology or online activities. Ward and LaBranche (2003) claim that blended learning is often labeled as "the best of both worlds". The term "blended learning" emerged from corporate training and has been widely adopted around the world . The definition of blended learning, however, is controversial among researchers and practitioners (Whitelock, 2004; Oliver and Trigwell, 2005). Macdonald (2007) describes blended learning as a "hot topic nowadays but everyone has a different understanding of what it means". Blended learning is a widely used term but some researchers criticise the term's lack of validity which has gained ground with practitioners and not theorists. Macdonald's claim is possibly right due to the ambiguous meaning of blended learning. Therefore, the research is an attempt to explore academics' views and possible educational theories which may enrich the definition and theoretical ground for blended learning.

The recent literature review exhibits two trends in blended learning definitions and research: (1) educational-focus and (2) technological-focus. For example, in an educational-focused manner Bliuc, Goodyear and Ellis (2007) define blended learning as "learning activities that involve a systematic combination of co-present (f2f) interactions and technologically-mediated interactions between students, teachers and learning resources". In contrast, in a technological-focused manner Allan (2007) describes blended learning as "the use of different internet-based tools including chat rooms, discussion groups, Podcasts and self-assessment tools to support a traditional course". In the last decade, much of the blended learning research has been devoted to technological-centred design and development rather than taking an educational-focus (Alavi, 1994; Fong, Kwan and Wang, 2008). To use Brabazon's (2007) term, "technology in education" highlights technologies that were designed, developed and used in education - technology is the primary focal point in the research and practice.

Blended learning studies based on pedagogical principles are few but have gradually increased (Mehrotra, Hollister and McGahey, 2001; Watson, 2001; Simonson, Smaldino, Albright and Zvacek, 2006; Chew and Jones, 2007). Their central concern is the process of learning and teaching rather than technology or how to use technology alone. In Brabazon's (2007) term, these research or practices are labelled as "education intechnology".

The different blended learning focus appears to be the results of disciplinary differences. Predictably, technologists show more interest in educational technology than professional educational theorists do (Bouras and Albe, 2008). The sociologist and educationist considers less the "what and how" state-of-the-art technology can aid education. Likewise, the technological scientist may not be concerned with the agenda which the sociologist and educationist focus on. Less attention has been paid to the pedagogical considerations. The educational technology developed by the technologist, consequently, may not meet the academics' or learners' needs. Thus, the rationale for this research is to investigate the potential gap of the two contrasting disciplines (ICT-related discipline and non-ICT related discipline) from different institutions - by identifying, analyzing and comparing the academics' experiences and perceptions on blended learning.

Graham (2006) indicates that blended learning could enable access and flexibility, enhance learning and teaching practices, and transform the way the individual learns or teaches. Laurillard (2002) proposes the rethinking of learning and teaching at university mediated by educational technology. Vaughan and Garrison (2005) further interpret blended learning as a fundamental redesign approach to enhance learning and teaching by rethinking and revisiting current practice. These claims are explored further, especially whether or not and how the "blended learning enabled, enhanced and transformed" learning in various disciplines.

> "…the aim of education is the knowledge not of facts but of values. Values are facts apprehended in their relation to each other, and to ourselves. The wise man is he who knows the relative values of things. In this knowledge, and in the use made of it, is summed up the whole conduct of life." (Dewey, 1997)

Bonk and Grahan (2006) claim that there has been a lot of hype around learning and teaching mediated by technology. There have been national studies concentrating on institutional e-learning or blended learning practices in both the UK and the US (Allen, Seaman and Garrett, 2007). Most of them focused on the study of environments or perspectives for e-learning or blended learning. They were all quantitative studies with a large sample size – country-wide HEIs. Qualitative investigations on blended learning experience and research were conducted by a few researchers such as Sharpe, Benfield, Roberts and Francis (2006). Comparing these institutional investigations, this research differs in three ways. First, blended learning experience and smaller sample size are investigated to provide an in-depth exploration. Second, HEIs are selected for socio-culturally wider blended learning strategies, practice and experience investigation. Third, comparison is highlighted and reflected to inform disciplinary issues. The research is an attempt to bring attention to such dimension as institutional strategies, disciplinary gap and disconfirming experience which have been less focused on by previous research.

In this research, it will study on the current blended learning experience of HEIs in Malaysia. Findings from the possible gap, confirming experience or disconfirming experience between contrasting disciplines. The outcomes of this study are analysed and justified to inform blended learning principles

to enhance learning and teaching practice in the educational paradigm. The study is important because it seeks to understand the current problems and opportunities of blended learning strategies and experience in HE enabled by the technological as well as pedagogical drivers. The research is an attempt to explore the possible disciplinary gap and develop some cross-disciplinary principles in a blended learning context. It is also acts as a comparative research for the conventional blended learning environment in different dimensions - from different discipline to different HEI. In addition, the research offers a contribution to knowledge that leads to the establishment of an underlying blended learning model in the later stage. The research aims for a notable shift from the conventional technological framework towards an insight into the blended learning principles underpinned by educational theory.

Role of the Learner in Technology Integration

Generally, in Malaysia, the central attention to education is the outcome of education, not the effectiveness of the learning process. Therefore, learners' are given insufficient attention to the process and yet feel abandoned along the courses. Although blended learning allows learners to study beyond the classroom, there should be a system to monitor student performance and progress in learning process. Without this system, a learning process may lose direction and fizzle out (Chitravelu, et al. 1995).

Blended learning is believed to provide many benefits to the learners. In order to experience full advantages of the educational opportunities available using blended learning approach, the learners have to become less of passive and more active participants in the learning process (Stansfield, McLellan & Connolly, 2004). Moreover, blended learning offers excellent possibilities for placing students at the centre of learning. Learners are being encouraged to take part in discussions forum and make valuable contributions to the learning process. The central importance is given to learning and the learner.

The methodology used in blended learning environment requires that learners take an active part in the learning process and participate by posting up their ideas, responding to colleagues and sharing their thoughts and views. Lungu (2013) in her study on the significance of blended learning technology into ESP classes, suggest blended learning provides easiness in

learning English because students could have 24/7 access to their interactive learning materials, allowing them to study at anytime and at anyway.

However, the use of blended learning can pose challenges for students. Unrealistic expectations and feelings of isolation are some of the challenges experienced by the students. Vaughan (2007) cites previous studies () have shown that students enrolled in blended courses can sometimes have unrealistic expectations. The students have the tendency to assume that fewer classes meant less work and experienced problems with accepting responsibilities to manage their own learning. Students have also reported feeling isolation due to the reduce opportunities for social interaction in a face-to-face classroom environment (Smyth et al., 2012).

Consideration of learners' needs and expectations is important to determine student satisfaction and willingness to take the courses. Bliuc et al., 2007; Harris et al., 2009; Mitchell & Honore, 2007 explain that managing learners' expectations and level of understanding are important for development and implementation of successful blended learning modules. Furthermore, blended learning can only be successfully implemented if the learners have sufficient knowledge of, and are willing to use, the newly introduced technology. Learners must be trained and equipped to navigate the information and communication technology used in blended learning (Beadle & Santy, 2008; Harris et al., 2009).

REVISITING HIGHER EDUCATION AND TECHNOLOGY

A general but superficial consensus today is that education or technology can improve the quality of life. For example, Hinton (2005) signifies that the value of HE is to "hold the promise of opportunity for improvements in the quality of life for people of all cultures". Moller (2004) affirms that technology breakthroughs have held the promise to improve life. Watson (2001) states that ICT is often seen as a "catalyst for change" that impacts on teaching style and learning approaches (Jones, Chew, Jones and Lau, 2009). Since both HE and technology held the promise for "life changing, impact and improvement", the researcher would like to pose the question at the beginning of this literature review: ICT innovations impact on learning and teaching experience in HE and are often perceived as a "catalyst for change".

However, has ICT enhanced the quality of learning and teaching? (What are the good practices or disruption for blending technology higher educational experience?) The response to this question leads to the development of the idea for blended learning, which is the subject of this research.

Enhancement, normally, implies the improvement from the current state to another agreeable or satisfied level. To what "quality" the learning and teaching shall be enhanced may be related to the learning outcomes of a particular course or, in a wider context, the aim or role of higher education (HE). Such an educational aim is complicated. University has always been a physical place for educators, researchers and students to come together, to interact and to construct knowledge and skills. HEIs today are disrupted and pressurised by many forces, including digital culture and the emergence of the digital society. Since HEIs are intellectual communities which sit within the society, it is almost impossible to exist without technological aid. The digital culture has promoted the views of education as a potential market (Poster, 2005). Educational projects in Malaysia like "one laptop per family" and "Internet Village" have impact to the use of blended learning. However, some of the massive e-learning projects failed due to several key reasons such as lack of considerations for pedagogy, different cultures and complex educational environments (Meyer, 2006). The complexities of globalisation, educational and socio-cultural issues brought pressure to bear on modern higher education. To address these imperatives, a few major pressures based on Turban's Three Pressures Model were identified (Turban et al., 2002).

The constant pressures illustrated in Figure 1 play a disruptive role that is continuously shaping educational aims and policies and moving the directions of higher education from what educational researchers claim it should be. Under the rapid demand from the market, globalisation and government policy, university has been transformed from an "autonomy organism" to a "knowledge industry". Research may be conducted for publication purposes without actually "doing it" and for that reason academics may put less effort in learning and teaching. One might focus less on students' development on knowledge, practical skills and personality (Delors et al., 1996) compared with research; alternately, one might place emphasis on "teaching-only attitude" as that is the major "business" in the educational market. The role of the university may be weakened sociologically and

epistemologically with such a paradigm shift. Pelletier (2005), for example, contends that higher education has been suffering from an identity crisis. Nowadays, HE is finding ways to respond to globalisation, market demand, government policy and the rapid innovation in technology. The role of a HEI has become much more complicated in the process of responding to these pressures. It is often necessary to revisit the role and the identity of a university as well as the educational aims. The greatest challenge of higher education today, as Bates and Poole (2003) assert, is the quality of learning and teaching, and the need to revisit the aims of learning and teaching.

THEORIES RELATED TO BLENDED LEARNING

Behaviourism

Fundamentally, the best-known operant behaviourist, B. F. Skinner says that behaviourist model is derived from the stimulus-response approach where the learner is conditioned to respond based on stimulus. Under this paradigm, the orientation to learning emphasizes the outcome, or observable elements of particular behaviour responses in the learning process (Gredler, 2005).

From the behavioural viewpoint, the stimulus-response approach gives impact to the instructional design. Since behaviourism is stimulus-response based, the instructional design is depending on the classroom environments besides retaining the appropriate stimuli to serve the intended behaviour. In the context of learning, Skinner believes the stimuli are the form of reinforces that follow a response and that tend to strengthen behaviour or increase the probability of a recurrence of that response constitute a powerful force in the control of human behaviour (Brown, 1987). As the behaviorists mentionthat learning is strictly influenced by environmental factors and stimuli, this view is shown clearly through an example demonstrated by Skinner in a case of a baby who accidently touches a nearby object and hears a tinkling bell sound occurs. As the baby look in the direction from which the sound came, she manages to find the direction. The situation shows how the baby operated on her environment. Her responses were reinforced until finally a particular concept of behavior was learned.

Hence, blended learning approach is presented based on theory of behaviorism. Implications of this theory in the classroom have been discussed by many researches previously. The audio lingual method inspired by behavioristic principles has had a lasting impact on teachers' understanding of the process of human learning. As cited by Brown (1987), the audio lingual method emphasizes learners with the stimuli and it stresses repetition and reinforcement (operant conditioning) in order to develop desired habits. This is similar to the case of the baby as aforementioned. Additionally, the learning environment uses much tapes, language labs and visual aids to aid the learners.

Cognitivism

Unlike behaviourism, cognitivism focuses on the internal mental activities where learning is seen as information processing. Constructivists refer learning as a process of active construction of learner. Cognitivism carries the notion that "learning involves the reorganization of experiences in order to make sense of stimuli from the environment" (Merriam & Caffarella, 1999). The cognitive theory of learning is best described as a meaningful learning. In other words, learning itself will happen when the learner "attempt to make sense of their experiences".

The term meaningful learning is further described by Brown (1987) as, "a process of relating and anchoring new material to relevant established entities in cognitive structure". This indicates that the learning process involves learning through receiving, storing and retrieving information from the materials and the learning process is further developed by the learners through their existing knowledge structure (also known as schema) in order to learn better. In the present research, implications of cognitivism theory of learning are important throughout the instructional design models. With this notion, the study does consider learners' background knowledge and experience with blended learning approach before implementing the approach in their learning process. The study also considers the appropriate tasks needed in order for learners to effectively achieve the learning outcome. This is supported by Blanton (1998) in his view on cognitive learning theory that, "the instructional goals should include learners needs and interest, reflect the concerns of society, and make every effort to insure that goals are

focused at least toward the present and, hopefully, toward the future needs of the learner."

Constructivism and Social Constructivism

The theories that focus on processes and interaction, whether individually or socially, are the constructivism and social constructivism learning theories (Hung, 2001). Under the constructive paradigm, as advocated by Piaget (1960) and Bruner (1990), these theories emphasize the notion that whatever activities in person mind and environment have to be constructed by the individual through knowledge discovery (Piaget, 1960).

In the theory of constructivism, knowledge is believed cannot be simply passed on from learner to learner. Knowledge is acquired through how one's own mind constructs knowledge (based on own interpretation). Boethel & Dimock (2000) outline the six assumptions of constructivism theory of learning:

1. Learning is an adaptive activity.
2. Learning is situated in the context where it occurs.
3. Knowledge is constructed by the learner.
4. Experience and prior understanding play a role in learning.
5. There is resistance to change.
6. Social interaction plays a role in learning.

RESEARCH QUESTIONS

The key aim of this research is to explore, analyze and compare the blended learning experiences in higher educational institutions and Malaysia. This study is reflected in the research questions below:

1. What are the current blended learning experiences in the higher educational institutions in Malaysia?

2. How does the blended learning experience vary in different disciplines (social science-based academics and science-based academics)?

3. What are the reflections and the lessons learnt from the comparative experiences in (1) and (2)?

METHODOLOGY

This study is a descriptive research and using questionnaire as the instrument. The questionnaire consists of three sections which are (1) Blended learning approaches, (2) Students' readiness on blended learning and (3) Perception towards blended learning. The questionnaire was adapted from Al Zumor (2013)and using Likert Scale as a medium of measurement.

RESULTS

Demographic Data

Table 1 presents the demographic data in which the questionnaires had been distributed. A total of 261 were completed and returned by the students from higher education. The majority of the respondents with total of 194 were female respondents (74.3%) while 67 of them were male respondents (25.7%).

Table 1: Gender

Gender	Frequency	Percentage
Male	67	25.7
Female	194	74.3
Total	261	100

Table 2 below, presents the percentage of the age groups of the repondents. All of the 261 respondents in the study were between the ages of 20 and above 45 years old, with the vast majority (38.3%) between 26 and 35 years old. Standing in 33.7 percent is between the age 36 and 45 years old followed by the age above 45 years old with 27.2 percent. The least number of respondents were those between the age 20 and 25 (0.8%).

Table 2: Percentage of the Age Groups

Age	Frequency	Percentage (%)
20-25 years old	2	0.8
26-35 years old	100	38.3
36-45 years old	88	33.7
Above 45 years old	71	27.2
Total	261	100

Table 3 describes the faculty in which the respondents were from. The respondents were from a total of 26 different faculties, being the Faculty of Computer and Mathematical Sciences with the majority number of the respondents with 18.80 percent. There were 4 faculties with 4 respondents each, Faculty of Law, Faculty of Chemical Engineering, Faculty of Civil Engineering and Centre of Foundation Studies and 1 respondent only from Faculty of Mechanical Engineering (0.40%).

Table 3: Faculty of the Respondents

Faculty	**Frequency**	**Percentage (%)**
Faculty of Law	4	1.50
Faculty of Administrative Science and Policy Studies	6	2.30
Faculty of Communication and Media Studies	3	1.10
Faculty of Art and Design	5	1.90
Faculty of Music	3	1.10
Faculty of Education	3	1.10
Faculty of Electrical Engineering	7	2.70
Faculty of Mechanical Engineering	1	0.40
Faculty of Chemical Engineering	4	1.50
Faculty of Civil Engineering	4	1.50
Faculty of Pharmacy	7	2.70
Faculty of Medicine	3	1.10
Faculty of Dentistry	2	0.80
Faculty of Health Sciences	13	5
Faculty of Computer and Mathematical Sciences	49	18.80

Faculty of Architecture, Planning and Surveying	17	6.50
Faculty of Sport Science and Recreation	3	1.10
Faculty of Plantation and Agrotechnology	3	1.10
Faculty of Accountancy	7	2.70
Faculty of Business Managament	46	17.60
Faculty of Hotel and Tourism Management	11	4.20
Faculty of Information Management	2	0.80
Academy of Language Studies (APB)	35	13.40
Academy of Contemporary Islamic Studies (ACIS)	11	4.20
Centre of Foundation Studies (CFS)	4	1.50
Faculty of Applied Science	8	3.10

Table 4 presents the campus of the respondents. The highest number of respondents were from UiTM Shah Alam which is 47 respondents (18%). UiTM Johor Branch, UiTM Bernam Campus and UiTM Sarawak Samarahan 2 Campus were in the middle with 7 respondents each (2.70%). The least number of respondents were from UiTM Puncak Perdana Campus, UiTM Selayang Campus, UiTM Johor Branch Pasir Gudang Campus, UiTM Kelantan Branch and UiTM Terengganu Kuala Terengganu Campus with 1 respondent each (0.40%).

Table 4: Campus of the Respondents

Campus	**Frequency**	**Percentage (%)**
UiTM Shah Alam	47	18
UiTM Puncak Alam Campus	30	11.50
UiTM Puncak Perdana Campus	1	0.40
UiTM Selayang Campus	1	0.40
UiTM Sungai Buloh Campus	2	0.80
UiTM Section 17 Campus	5	1.90
UiTM Johor Branch	7	2.70
UiTM Johor Branch Pasir Gudang Campus	1	0.40
UiTM Kedah Branch	11	4.20
UiTM Kelantan Branch	1	0.40

UiTM Kelantan Branch Kota Bharu Campus	4	1.50
UiTM Terengganu	10	3.80
UiTM Terengganu Kuala Terengganu Campus	1	0.40
UiTM Pahang	19	7.30
UiTM Melaka	2	0.80
UiTM Melaka Jasin Campus	6	2.30
UiTM Negeri Sembilan Branch	13	5
UiTM Negeri Sembilan Branch Seremban Campus	8	3.10
UiTM Perak	19	7.30
UiTM Perak Tapah Campus	11	4.20
UiTM Perlis	17	6.50
UiTM Pulau Pinang	15	5.70
UiTM Pulau Pinang Bertam Campus	7	2.70
UiTM Pulau Pinang Balik Pulau Campus	0	0
UiTM Sabah Branch	9	3.40
UiTM Sabah Branch Tawau Campus	0	0
UiTM Sarawak	5	1.90
UiTM Sarawak Samarahan 2 Campus	7	2.70
UiTM Sarawak Mukah Campus	2	0.80

Computer and Internet Facilities

Table 5: Computer and Internet Facilities

Item	Response	Frequencies	Percentage
Does your university provide computers for lecturers?	Yes	235	90
	No	26	10
Does the computer provided by your university have Internet connection?	Yes	253	96.90
	No	8	3.10
Do you have Internet access through a WiFi connection on your mobile phone?	Yes	208	79.70
	No	53	20.30
Do you subscribe to any data plan for Internet connection?	Yes	221	84.70
	No	40	15.30

Do you have Internet access through cellular network (3G or 4G) on your mobile phone?	Yes	225	86.20
	No	36	13.80

Table 6 presents period of time in which the respondents had been using the computers. Majority of the repondents had been using the computer and Internet for more than 5 years with the percentage of 92.70%. 12 respondents had been using the computer and Internet between the 3 and 5 years (4.60%). 1.90% and 0.80% of the respondents had been using in between 1 and 2 years and less than 1 year respectively.

Table 6: Year(s) of Using Computer

Year(s) of Using Computer	Frequency	Percentage (%)
Less than 1 year	2	0.80
1-2 years	5	1.90
3-5 years	12	4.60
More than 5 years	242	92.70

Table 7 describes on how frequent the respondents access to the Internet. On this question, the respondents were allowed to choose more than one answer. Majority of the respondents which is 96.20% of them accessed to Internet everyday, 3.40% accessed more than once a week while 0.40% were not an Internet user.

Table 7: Access to Internet

Access to Internet	Frequency	Percentage (%)
Everyday	251	96.20
Once a week	0	0
More than once a week	9	3.40
Once a month	0	0
Not an Internet user	1	0.40

(Respondents can choose more than one answer)

Table 8 describes the respondents' activities when they are connected to the Internet. For this question, the respondents can choose more than one answer. Activity that majority of the respondents often engaged in when connected to the Internet was searching for information (95%). The third activities that was most often engaged by the respondents are online learning activities (59%). 10% of the respondents also answered 'Other' as the activity they were engaged to while connected to the Internet.

Table 8: Activities when Connected to the Internet

Activity	Frequency	Percentage (%)
Email	235	90
Searching for information	248	95
Online Learning Activities	154	59
Entertainment	123	46
Other	26	10

(Respondents can choose more than one answer)

Perception on Blended Learning Approach as Teaching Delivery Method

Table 9 shows that 66.70% of the respondents have registered as blended learning instructor while 33.30% had not registered.

Table 9: Blended Learning Registration

Response	Frequency	Percentage (%)
Yes	174	66.70
No	87	33.30

Table 10 presents the respondents' responses on 11 given questions in finding out their perception on blended learning approach as teaching delivery method. These questions were presented to the respondents in a likert scale with the highest being strongly agree, agree, not sure, disagree and strongly disagree. Item 10 has the highest mean which is 4.13 with standard deviation of 0.91 while item 9 is in the middle with mean of 3.70 and standard deviation of 1.02. Item 7 on the other hand, has the lowest mean which is 3.14 with standard deviation of 1.12.

Table 10: Perception on Blended Learning Approach as Teaching Delivery Method

No	Item	Mean	Standard Deviation
10	Blended Learning decreases costs disseminating teaching materials (printing)	4.13	0.91
3	Lecturers may conduct the course anywhere and anytime using Blended Learning approach (provide flexibility).	4.05	0.93
1	Students may exposed to variety of learning resources using Blended Learning approach	3.93	0.97
5	Lecturers can expand their creativity of delivering teaching process using Blended Learning approach	3.86	0.99
2	The problem of insufficient classroom and lab can be reduced by using Blended Learning approach	3.81	1.09
9	Blended Learning approach is a platform to share ideas and experience among students	3.70	1.02
6	Students and the lecturers can have more interactivity activities outside class using Blended Learning approach	3.57	1.08
8	Blended Learning approach supports cooperative / peers learning among students	3.47	1.05
11	Blended Learning approach encourages students to participate in the discussion (reduce inhibition)	3.40	1.11
4	It is easy for the lecturer can get online responses/participations from students	3.22	1.18
7	Students can learn better using Blended Learning approach	3.14	1.12
	Average	3.66	0.79

(1-Strongly Disagree, 2-Disagree, 3-Not Sure, 4-Agree, 5-Strongly Agree)

i-Learn Portal as Official Learning Management System (LMS) to Support Blended Learning Approach

The table below presents the respondents' responses to six questions in order to find out whether i-learn portal as official learning management system (LMS) supports the blended learning approach. Based on the table, item 1 has the highest mean, which is 3.73 with standard deviation of 0.91 where the respondents responded that the i-Learn Portal is easy to be accessed. Item 2 and item 5 are have the middle mean of 3.43 and 3.31 with 0.93 and 1.01 respectively. Item 4 has the lowest mean, 2.73 with standard deviation of 1.03 that shows that there is technical issues when using i-Learn Portal.

No	Item	Mean	Standard Deviation
1	It is easy to access i-Learn Portal	3.73	0.91
3	Sufficient training for lecturers on using i-Learn Portal	3.62	0.99
2	i-Learn Portal is user friendly Learning Management System (LMS)	3.43	0.93
5	i-Learn portal is a good platform to obtain variety of learning resources	3.31	1.01
6	Features provided in i-Learn Portal are sufficient to support Blended Learning approach	3.17	0.97
4	There is no technical issues when using i-Learn Portal	2.73	1.03
	Average	3.33	0.76

(1-Strongly Disagree, 2-Disagree, 3-Not Sure, 4-Agree, 5-Strongly Agree)

In Your Opinion, What Is/Are Features Should Be Provided in i-Learn Portal to Enhance its Functionality as Official LMS?

Based on the respondents' responses most of them would like i-Learn portal to be user friendly and mobile friendly. According to the respondents, some of the features in i-Learn portal were complicated for them and the students to use where there was no step-by-step guide to help them in the process of using the portal. Besides that, respondents mentioned that the students were reluctant to use i-Learn portal because they were unable to access it using their mobile phone unlike Facebook group.

The respondents also suggested that there will be more functions and options to create and to answer tests and quizzes. The respondent pointed out that:

> *"At Assessment Manager (To create quiz/test etc) need more function during making question like, a) cannot insert image or figure or table, b) no new line means text not to go to next line when enter (no need to insert
 tags) c) cannot submit and evaluate essay question especially programming code d) cannot modified question from question bank AT Course/Group Forum a) cannot delete other thread (as instructor) to avoid spam message/thread"*

Thus, they proposed to have more flexible in how the test and quizzes being displayed, for example to make YouTube video clips to be embedded in the tests and quizzes. Besides that, the respondents would like it if variety of activities and teaching approaches to be made available in i-Learn portal and not just limited to tests and quizzes. A few of the respondents also proposed that i-Learn portal to be made like iClass (iNED). One respondent stated that:

> *"If i were to compare between ilearn and iclass (ined), I choose ined. Why? simple, easy to understand, not so many icons, and friendly user. I would suggest ilearn follow exactly the feature of iclass."*

The respondent shared that iClass (iNED) is simple, easy to use and has less icons which simplifies the process of accessing and operating the portal.

Barriers in Conducting Course using Blended Learning Approach

The table below shows the responses on the barriers in conducting course using blended learning approach. Item 4 has the highest mean which is 3.64 with standard deviation of 1.18 that shows the Internet connection in faculty/office is not sufficient to conduct online learning. Item 8 is in the middle with mean of 3.08 and standard deviation of 1.14 which shows that blended learning approach increase he respondents' teaching workload. Item 7 has the lowest mean which is 2.63 with standard deviation of 1.16 that shows the respondents were not sure how to conduct course using blended learning approach.

Table no/title

No	Item	Mean	Standard Deviation
4	The Internet connection in faculty / office is not sufficient to conduct online learning	3.64	1.18
2	Online assessment such as online quizzes and tests are difficult to manage	3.44	1.17
11	I have problem in obtaining students' engagement in online learning	3.44	1.14

5	The faculty / campus does not provide variety of software to develop digital course content	3.35	1.06
12	It takes times for me to have skills on conducting course using Blended Learning approach.	3.30	1.16
1	There are limited number of computers connected to the Internet	3.23	1.35487
8	Blended Learning approach increase my teaching workload	3.08	1.14
10	I have problem in monitoring students' online participation	3.04	1.22
3	There is no online tools suitable for my course to conduct online assessment such as online quizzes and tests	2.93	1.20
9	I do not have knowledge on online pedagogy	2.87	1.19
6	I am not exposed to variety of Web 2.0 tools to conduct my online learning activities	2.78	1.07
7	I am not sure how to conduct course using Blended Learning approach	2.63	1.16
	Average	3.05	0.69

(1-Strongly Disagree, 2-Disagree, 3-Not Sure, 4-Agree, 5-Strongly Agree)

Suggestions to Improve Blended Learning Approach in UiTM

The table below presents the respondents' response on the suggestions to improve blended learning approach in UiTM. With the mean 3.35 and standard deviation of 1.04, the respondents preferred to conduct their course using current blended leaning approach.

Item	Mean	Standard Deviation
I prefer to conduct my course using current Blended Learning approach.	3.35	1.04

(1-Strongly Disagree, 2-Disagree, 3-Not Sure, 4-Agree, 5-Strongly Agree)

In Your Opinion, What Is the Best Way to Implement Blended Learning Approach in Teaching and Learning Process?

Based on the responses from the respondents, the best way to implement Blended learning approach in teaching and learning process is to have a good and stable internet connection to access the portal as well as to upload and download files. A few respondents stated that:

> *"When the internet server speed is heightened (improved) and (lecturers and students can) access o it is 24/7".*

> *"...because when i upload file, its not working. The students cannot download that file. there's an error"*

> *"The internet connection wifi is very important. I used to conduct my test online. But student complained that they always got problem with the wifi / internet connection".*

Besides that, respondents said a user friendly portal will make it easy and able to motivate lecturers and students to use it. Futhermore, the respondents suggested to give freedom for the lecturers and the students to include and share other webtools in i-Learn portal like blendspace and google drive.

Other way to implement Blended learning approach in teaching and learning process according to the respondents is by providing the lecturers and students training on current and relevant softwares and applications as well as on how and when to use materials in blended learning. One respondent pointed this:

> *"1. More training on current and relevant softwares/ applications (internal & external). 2. Need strong support groups 3. Encourage lecturers to use computers in the teaching and learning process 4. Benchmarking! 5. Smaller students in one class."*

Lecturers and students should also be provided with support group to guide them in using Blended learning approach. One repondent also suggested the best way to implement blended learning in teaching and

learning process is by introducing the approach to the students since their school years to help them to familiarize of the concept and understand the importance and benefits of this approach.

Please Leave Your Comment or Suggestion on Blended Learning Implementation in UiTM

Based on the comments and suggestions of the respondents on blended learning implementation in UiTM, majority suggested the university to fix the Internet connection and to make i-Learn portal as mobile friendly and user friendly. Besides that, i-Learn portal needs to improve the assessment manager to create tests and quizzes to have more functions and features. Some respondents who taught Mathematics complained that the assessment manager does not support certain Mathematical equations. One respondent pointed this:

> *"...not suitable for all mathematics subject"*

Some of the respondents also suggested that the university should provide trainings for lecturers and students on blended learning and encourage them of the importance and benefits of blended learning;

> *"1. More training on blended learning hould be provided at campuses / branches level. 2. A skillful personal specific to guide lecturers to prepare blended learnbing (learning) depend on each lecturer's need should be provided and available all the time of semesters."*

Although many agree on the implementation of blended learning with improvement on certain areas, there were respondents who think that face-to-face interaction with the students is better than interaction with them online due to the students preferance in using Internet to access to their social network and entertaiment purposes only as stated by the respondent below:

> *"Frankly I think the blended learning approach is not suitable for the majority of UiTM students. Undoubtedly it is true that students (youngsters) today are more internet and online savvy but this must not be equated to their willingness to learn. Mostly*

they are online for ntertainment/social purposes and not to fulfill their learning desire. This may sound old fashion, but students learn more effectively through traditional classroom method."

In Your Opinion, What are the Examples of Teaching and Learning Activities that Need to be Implemented by the Lecturers to Encourage Online Learning Participation among Students?

Based on the respondents' responses, they suggested to have activities such as forums and discussions where there will be two-way communication between the lecturers and students. As stated by the respondents:

"Forum and discussion on certain topic in a course"
"Discussion, forum, interactive learning through online (interactive resources in i learn)"

Live chats and video conference would also encourage the students to participate in online learning. Futhermore, dialogue sessions and virtual learning would also work too. Majority of the respondents suggested that activities that involved interactive voice and video feeds as well as animations and illustrations would encourage students to participate in the online learning. Therefore, respondents would like it if the i-Learn portal supports images and videos to be embedded and uploaded to the portal for assessment, discussions, tests and quizzes. As stated by there respondents:

"Video clippings of task related to topics e.g. I am teaching Environmental Health Law,..."

"Let the students make their own video and upload the video for other students to view and learn from their peers."

"Using visual aids such as pictures, videos, films as a motivational tools in enhancing students' interest in a particular subject."

Besides that, activities like projects and presentations that involve sharing various types of teaching materials in any format, for example, PowerPoint slides, Prezi and iSpring, would encourage the students'

participation in online learning. Some of the respondents also suggested that the institution to provide trainings for the students on using different softwares and materials so that they will be encouraged to explore and apply what they have been trained to their online learning.

CONCLUSION

Blended learning has the ability to enhance and transform learning in various areas. However, to achieve this, it is important to explore, analyse and compare the blended learning experience in higher education in order to discover more about blended learning in higher education and at the same time offers a contribution to knowledge that leads to the establishment of an underlying blended learning model in the later stage.

Based on the responses provided by the respondents, majority of them view blended learning as a good way for teaching and learning though a lot of improvements and preparations need to be done by the institutions, from providing a stable Internet connection to trainings as blended learning can only be successfully implemented when the learners are prepared and have sufficient knowledge to apply the information and communication technology used in blended learning.

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