

EXAMINING THE ADOPTION OF BLENDED LEARNING AMONG MALAYSIAN ACADEMICIANS

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ABSTRACT

To date, there are a growing number of higher learning institutions in Malaysia begin to adopt blended learning as a new teaching method in tandem with Malaysia Education Blueprint 2025. For centuries, a traditional method of teaching is now described as a passive teaching mode because they discourage students from critically filtering the delivered information. For this purpose, the present study intends to examine the effects academicians' interest, ICT facilities, perceived ease of use and adequate training on the system adoption. Evidently, the result shows that academician interest, adequate training and perceived ease of use are the main important determinant in adopting the blended learning approach among Malaysian academicians. This study contributes to present literature on blended learning effectiveness particularly in Malaysian context. The outcomes obtained can benefit all lecturers, students as well as management of the university and indirectly enhanced the quality of the university itself.

ABSTRAK

Sehingga kini, semakin banyak institusi pengajian tinggi di Malaysia mula menggunakan pembelajaran gabungan sebagai kaedah pengajaran baru selaras dengan Pelan Pendidikan Malaysia 2025. Selama berabad-abad, kaedah pengajaran tradisional kini digambarkan sebagai mod pengajaran pasif kerana ianya tidak menggalakkan pelajar daripada menapis maklumat yang dihantar secara kritis. Untuk tujuan ini, kajian ini berhasrat untuk mengkaji kesan ahli akademik, kemudahan ICT, kemudahan penggunaan yang mudah dan latihan yang mencukupi ke atas penggunaan sistem. Jelas sekali, hasilnya menunjukkan minat ahli akademik, latihan yang mencukupi dan kemudahan penggunaannya adalah penentu penting utama dalam mengadaptasi pendekatan pembelajaran gabungan dalam kalangan ahli akademik Malaysia. Kajian ini menyumbang untuk menyampaikan literatur berhubung dengan keberkesanan pembelajaran gabungan terutamanya dalam konteks Malaysia. Hasil yang diperolehi dapat memberi manfaat kepada semua pensyarah, pelajar serta pengurusan universiti dan secara tidak langsung meningkatkan mutu universiti itu sendiri.

Keywords: Blended learning, Preparedness, Adoption, Education, Malaysia.

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1. Introduction

Blended learning (BL) is defined as a formal education learning program that acquire students to learned at least part of online delivery of content and instruction with some element of student control over time, place, path or pace. According to Garrison and Kanuka (2004), in order to have a meaningful influence, the blended learning tools need to be updated, reliable and user friendly. Blended learning tools not only help students to learn through online system but also help them to stay organized, communicate and track achievement. To ensure the success of blended learning, academicians should play important roles. The traditional method of learning in class seems to be ineffective since students are varying in terms of gender, culture and personality. Out of these differences, it has made university teaching a more challenging job nowadays. For these reasons educators or academicians has to plan properly on what and how to make learning effective. Therefore, one of the ways now is integrating the face-to-face learning with online component. However, many instructor or academicians are in favor of blended learning while others seems not interested and tend to choose the old method of one way communication in class.

For many years, lecturers or academicians used traditional method to interact with students. However, 100% face to face teaching approach are now described as one-way teaching mode between students and lecturers because of the difficulties to encourage critical thinking among students. Students are being spoon feed by their lecturers and this hinders them from filtering the delivered information. Due the fact that students nowadays are digital native, thus blended learning approach is the best method that should be adopted by academicians. Based on the analysis gathered from Centre for E-Learning UMS, the number of lecturers using BL increased to 76% in 2017 as compared to 33% and 53% in 2015 and 2016. However, these year-by-years increment still did not achieve the target of 100 % as stated in Malaysia Education Blueprint, which warrants an empirical investigation. This work closes the gap.

For this purpose, this work intends to examine the following objectives:

- To identify relationship between academicians interest with adoption of blended learning among Malaysian academician.
- To evaluate relationship between Information and communication technology (ICT) facilities with adoption of blended learning among Malaysian academicians.
- To examine relationship between perceived ease of use with adoption of blended learning among Malaysian academicians.
- To investigate the relationship between training with adoption of blended learning among Malaysian academicians.

2. Literature review

2.1 Blended learning

Generally, most of the researchers agree that blended learning can be described as a combination of traditional method of learning approach and online learning (Garrison & Kanuka, 2004; Wakefield *et al.*, 2008). Through blended learning approach, students are now able to download notes or to attend lecture at anytime, anywhere and at their own available mode. In fact, student will have more interest when the elements of blended learning are in the course content. According to Driscoll (2002), blended learning is a combination of any instructional forms to carry of any of the educational goal, while Garrison and Kanuka (2004) noted that to blend simply means integrating traditional face-to-face teaching approach with online experiences. The combination of traditional modes with online mode resulted in better learning outcomes (Garrison & Kanuka, 2004).

2.2 Academician's interest

Academicians come from different level of age. They can be baby boomers, digital wise or digital natives. A misconception happens when lecturers or educators lack of basic skills in using blended learning and these group came from baby boomers whose age are around 50 to 60 years old. The fact that many lecturers in higher education institutions are now using the online platforms actively shows their interest and the willingness of them to co-operate with the e-learning vision (Olayiwola & Alimi, 2015). Academicians should have knowledge in conducting blended learning approach especially when this method could attract students' interest. Study done by Lee (1999), found that most of the attitudes held by academicians were negative towards teaching online because they doubted the quality of education that students received through online courses. Therefore, to cater their interest, they need to be retrain and reinvest with the paradigm shape of blended learning (Ying & Yang, 2017). Anizah *et al.* (2012) believes that learners with poor learning habits and lack of interest to initiate blended learning is one of the most critical drawbacks that distract them from adopting the blended learning approach. Ying and Yang (2017) in their study noted that academicians agreed that blended learning made learning more accessible and flexible to students other than the use of blended learning in class are time and cost effective as compared to traditional learning environment.

H₁: There is a positive relationship between academician's interest and adoption of using blended learning among Malaysian academicians

2.3 ICT Facilities and knowledge

Some of the reasons why blended learning are difficult to implement is because of lack of facilities needed. Technology enabled learning policy and strategy is very important to develop because as we are going on to paperless environment, this will help us on time and better understanding the subject matter. This is supported by a study done by Alabi and Okemakinde (2010) which found that lack of facilities and basic infrastructure has becomes one of the reasons of ineffective educational planning. Since ICT is developing at a rapid speed, there is a need for end user to familiarise themselves with new technical terms, device, platform and how this collective knowledge can be put into practical use in the teaching and learning contexts. Study done by Masalela (2009) explained that most of the respondents agreed that technological infrastructure is crucial in blended learning environment. Availability of Wi-Fi connection in the campus is part of ICT facilities that allowed students to easily re-access any lectures that may have been missed, or not fully understood. In implementing blended learning environment, it is very important for the management to ensure that each corner of the institution has good and fast Wi-Fi connectivity. In fact, students frequently complain about the quality of internet connection in the campus and hostels. Ola and Alimi (2015) stated that this adequate network infrastructure, which includes high speed of Internet, adequate service and support, reliable and affordable internet connection, hardware and software, are very essential in a blended learning environment. Management has to make sure that the fundamental aspect of internet connectivity in campus are satisfactory to enable lecturers and students in completing the related task using blended learning approach. It was reported that teachers' digital literacies, educational ICT training, and ability to access the Internet are among important determinants in implementing blending learning (Badia *et al.*, 2014). According to Regha (2015), instructor should have ICT skills and knowledge especially in developing country where the skills and usage are still low. Due to this with blended learning, students and lecturers/academicians will interact with technology more frequently and this will improve their ICTs skills and competence.

H₂: There is positive relationship between ICT facilities with adoption of blended learning among Malaysian academicians

2.4 Perceived ease of use

Current generations who are known as millennials are considered tech-savvy generations as they are the generations that are parallel with the technology advancement (Ellucian, 2017). To millennials or generation -Y, they found it easy to deal with any business by using technology. Perceived ease of use is defined as ‘the degree to which a person believes that using a particular system would be free of physical and mental effort’ (Davis, 1989). Joo *et al.* (2011) stated that less effort is needed when using a particular interface. A study done by Bandyopadhyay and Fraccastoro (2007) found that differences in gender has impacted the adoption of using blended learning. This also explains by Li and Kishore (2006) that males are more concerned about the performance while females are more particular on the ease of use. This is also supported through a survey done by Ong and Lai (2006), that women tend to be very details and cautious on the perceived ease of use while men focus on performance of the system. Tshabalala *et al.* (2014) stated that there are few positive perceptions on the ease of use in which they noted that most of the academic staff has experience in using computer for more than 10 years and adopting blended learning among them is not a problem. Anisur *et al.* (2016) in their study found that there is a positive correlation between perceived ease of use and system usage. In addition, Osama *et al.* (2016), noted that perceived ease of use has the highest score of mean indicated that respondents considered that blended learning is easy to use, understandable and flexible.

H₃: There is positive relationship between perceived ease of use with adoption of blended learning among Malaysian academicians

2.5 Training

Blended learning environment has been designed in the form of online material, exams, test and many more. Thus, to create all these lecturers or academicians need to have skills and expertise with the use of technology. Many lecturers or academicians have not yet mastered the basics use of using computers, which will also block the mode to adopt blended learning approach. Buhari and Halim (2014) explained that due to technology savvy nowadays, most of the academicians are ready to use the blended learning approach as it makes teaching more interesting and motivating. However, they also noted that due to technology advancement, most of the educators failed to use and integrate this technology in their teaching method, thus making them to reject blended learning approach. Tshabalala, *et al.* (2014) also stated that lack of confidence will tend to reduce the spirits of academicians who believes that necessary expertise is needed in conducting a blended learning. Therefore, they argue that staff development is needed in order to adopt blended learning method in class. Buhari and Halim (2014) reported that to implement blended learning successfully, adequate training and skill need to be given to all lecturers and course facilitators. Lack of training will hinder the success of delivering the course content online. Tshabalala *et al.* (2014) in their study explain that most of the academic staff does not really understand the meaning of blended learning itself and therefore did not have confidence to adopt blended learning, thus they recommended staff to have training courses. Olayiwola and Alimi (2015) explain that skills are needed in delivering the knowledge using blended learning.

H₄: There is positive relationship between training with adoption of blended learning among Malaysian academicians.

Based on these literature analyses, we propose the following research framework:

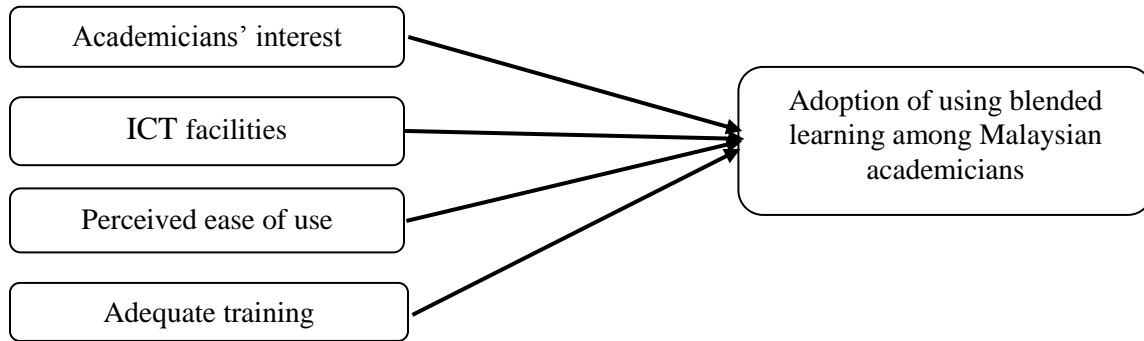


Figure 1: The Research Framework

3. Methodology

The objectives of this study were to explain the relationships on the academician interest, adequate ICT facilities, and perceived ease of use as well as adequate training with adoption of using blended learning among Malaysian academicians. Thus, it can be considered as a causal type of research design. The sample of this study comprises of academicians from Universiti Malaysia Sabah (UMS). Quantitative methods were used as a research design. The sampling data were focuses on academicians who are required to use online learning approach as stated in Malaysia Education Blueprint 2025. From a total population in UMS a sample of 200 academicians were selected as the target respondents in determining the sample size as suggested by Raul and Kajanto (2008). However, only 89 responded to the survey, thus only pilot test are conducted. UMS has been chosen as a target sample due the convenient survey and direct information can be obtained from the academicians. Questionnaire survey was collected to gather the relevant data needed to examine the relationship in-between multiple factors that affect the academicians' adoption in using blended learning.

This study used primary source of data collected using self-administered questionnaires. Google Form was used as online tools to generate a survey link. In this study, a five (5) - point Likert scale was applied in all section of questionnaires except for demographic background of respondents.

3.1 Statistical analysis

In order to measure the independent variables, this study adopted the work of Mac Callum and Jeffrey (2014), by using 23 items and the response scale based on five- frequency Likert-typed scale. Examples are “I believe I would find it easy to use BL tools to support my teaching”, “By using the BL, it will make learning and teaching more interesting” and “My University provide workshops on blended learning for faculty”

In order to measure the dependent variable, this study adopted the work of Chang (2010) and Vatanasombut *et al.* (2008) by using 7 items and the response scale based on five- frequency Likert-typed scale. Examples are “I intend to use BL tools for knowledge gathering”, “I intend to use the BL tools for knowledge construction” and “Next time I am willing to use the BL functions again to prepare the course works”.

In this study, structural equation modeling (SEM) with partial least squares (PLS) analysis was utilised to allows empirical assessment of proposed measurement and assess the relationship between the variables. Diamantopoulos and Winklhofer (2011) asserts that “PLS avoids many restrictive assumptions of multivariate normality and large sample size, and is appropriate to analyze small sample size with both the reflective and formative indicators to obtain better estimation and explication”. The reliability and validity of the model were analysed and interpreted by evaluating the PLS modeling results (Chin, 2010).

4. Results

Table 1 reports the respondent’s demographic data. The majority of the respondents are in the age group of 31-40 years of age, which is 40%.

Table 1: Demographic profile

Profile	Classification	Frequency (n)	Percentage (%)
Gender	Male	28	31
	Female	61	69
Age (year old)	21-30	9	10
	31-40	36	40
	41-50	35	39
	51 and above	9	10
Education level	Degree	4	4
	Master/MBA	45	51
	PhD/DBA/EdD/MD	40	45
Working experience (years)	2-5	27	30
	6-10	24	27
	11-15	16	18
	16-20	13	15
	21>	9	10
Position	Tutor	3	3
	Lecturer	41	46
	Senior lecturer	29	33
	Associate Prof	12	13
	Professor	4	4

A total of 89 respondents participated in this study and majority of the respondent were female lecturers (69%). Most of the respondents holds a master degree or MBA (51%) while 4% of respondents are degree holders. Most of the respondents have working experience from 2 to 5 years which consists of 30 %. The respondents were from many different and majority are lecturer, which consists of 46%, 33% respondents senior lecturers, 13 % of respondents are associate professor and only 4 % are professors.

Table 2: Convergent validity

Construct	Item	Loading	CR	AVE
Adoption	A1	0.866	0.96	0.776
	A2	0.886		
	A3	0.820		
	A4	0.893		
	A5	0.875		
	A6	0.921		

Academics' interest	A7	0.903	0.93	0.727
	AI1	0.838		
	AI2	0.864		
	AI3	0.878		
	AI4	0.894		
	AI5	0.785		
ICT facilities	ICT1	0.690	0.905	0.578
	ICT2	0.745		
	ICT3	0.745		
	ICT4	0.759		
	ICT5	0.809		
	ICT6	0.798		
	ICT7	0.770		
Perceived ease of use	PU1	0.863	0.932	0.733
	PU2	0.823		
	PU3	0.901		
	PU4	0.847		
	PU5	0.843		
Adequate training	T1	0.854	0.909	0.67
	T2	0.884		
	T3	0.920		
	T4	0.780		

Note: CR=Composite Reliability, AVE=Average Variance Extracted.

To evaluate the measurement model, literature suggests that the indicator loadings, average variance extracted (AVE), and the composite reliability (CR) values be used to measure the convergent validity (CV). The CV evaluates whether or not the items represent the same underlying construct. The loadings of the indicators were measure to ensure that they were above the threshold of 0.6 (Chin *et al.*, 1997; Gholami *et al.*, 2013), the AVE should be above 0.5, and the CR value should be above 0.7. As from Table 2, all the values were above the recommended value points, thus ensuring achievement of CV.

The reliability of the measures using the composite scale reliability was determined (Fornell & Larcker 1981;) and average variance was determined (Fornell & Larcker 1981). Table 2 indicates that the CR exceeds 0.90, and the AVE of all measures is above the cut-off value of 0.50 proposed by Fornell & Larcker (1981).

Table 3: Discriminant validity

	Adoption	AI	ICT	PU	AT
ADOPTION	0.881				
AI	0.782	0.853			
ICT	0.438	0.325	0.761		
PU	0.705	0.715	0.498	0.856	
AT	0.471	0.298	0.546	0.398	0.819

Note: CR=Composite Reliability, AVE=Average Variance Extracted, bolded items are square root of the AVE. Adoption= Adoption of using blended learning among Malaysian academicians, AI=Academicians' interest, ICT=ICT facilities, PU=Perceived ease of use, AT=Adequate training.

Next, discriminant validity (DV) was verified, which indicates the extent to which a construct differs from other constructs within the model. The square root of the AVE was compared with the correlations among constructs. In cases where the square roots of the AVE values are higher than the correlation values in the respective row and column, thus it can be confirm that the measures are discriminant. Table 3 shows that the square roots of the AVEs are higher than the row and column values; as such DV is confirmed.

Table 4: Structural model

Hypothesis	Beta	t-value	p-value	Supported	R ²	f ²	VIF
H1:AI → ADOPTION	0.565	5.721**	0.000	Yes	0.696	0.510	2.464
H2:ICT → ADOPTION	0.047	0.539	0.295	-		0.004	2.057
H3:PU → ADOPTION	0.199	2.115*	0.017	Yes		0.053	1.65
H4:AT → ADOPTION	0.199	2.322**	0.010	Yes		0.088	1.472

Note: ** $p < 0.01$, * $p < 0.05$, Adoption= Adoption of using blended learning among Malaysian academicians, AI=Academicians' interest, ICT=ICT facilities, PU=Perceived ease of use, AT=Adequate training.

In the next stage, path analysis was carried out to test the four hypotheses generated for this study. Table 4 presents the results and the direct effects of academicians' interest, ICT facilities, perceived ease of use and training on the adoption of blended learning by academicians.

From the above table showed, it is conclude that there are a significant relationship between academicians' interest, perceived ease of use and training with an adoption of blended learning. And the R square showed is 0.696 it means 69.60 % of the lecturer's adoption rate are being explained by academicians' interest, perceived ease of use and training.

Results of the variance inflation factor (VIF) is satisfactory which is < the suggested cutoff level of 10 (Hair *et. al.*, 2017) as indicated by the results in Table 4 where VIF values are less than 10 (ranging from 1.472 to 2.464). Thus, all predictors are moderately correlated with adoption of blended learning.

Results of the study indicate that academicians' interest ($\beta = 0.565$, $t = 5.721$, $p < 0.01$) has significant relationship with lecturers adoption of blended learning. Thus, hypothesis 1 is accepted. This parallels the findings of Olayiwola and Alimi (2015) which reported higher levels of interest and increased adoption levels.

The results further suggest that perceived ease of use ($\beta = 0.199$, $t = 2.115$, $p < 0.05$) are significant predictors of lecturers adoption of blended learning. Therefore, hypothesis 3 is accepted. This is in line with a study done by Tshabalala *et al.* (2014) which stated that staff development is needed to adopt blended learning method in class.

Results of the study also report that training ($\beta = 0.199$, $t = 2.322$, $p < 0.01$) significantly lecturers adoption of blended learning. Thus, hypothesis 4 is accepted. This results echoes the sentiments of Buhari *et al.* (2014) which reported that to implement blended learning successfully, adequate training and skill need to be given to all lecturers and course facilitators.

In order to determine impact of an exogenous construct on an endogenous construct, effect size f^2 was examined (Gefen & Rigdon, 2011). Table 3 results of f^2 indicates, one relationship with large effect sizes (>0.35), and the remaining relationships with medium (>0.15) and small effect sizes (<0.02) as suggested by Cohen (1988).

5. Conclusion and future research

In the present study, the objective of the study was to study the factors that affect the adoption of using blended learning among Malaysian academicians. The results suggest that academicians' interest, perceived ease of use, and training significantly affects the adoption of blended learning. This study contributes to present literature on education and learning particularly in the Malaysian context, other than it contributes to the practitioner in this context are the Malaysian academicians.

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