

The Usefulness of I-Learn System in the Execution of e-Learning: A Case Study of UiTM Negeri Sembilan

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Abstract—Electronic learning or e-learning (eL) is becoming the most effective learning method aligned with rapid evolving technologies in the Malaysian higher education system. The shift to online learning environment has permitted efficient interactions among students and lecturers and increased the students' engagement in learning. Hence, Universiti Teknologi MARA has developed the learning management system named as i-Learn as the eL platform. This study aimed to determine the correlation among students' understanding, eL applications and eL materials towards eL usefulness and to identify the major factors that contribute to eL usefulness among lecturers in UiTM Negeri Sembilan. This study involved UiTM Negeri Sembilan lecturers who have practiced blended learning as their teaching module. Data were gathered through surveys among academicians from every faculty in UiTM Negeri Sembilan. Therefore, this study provided insight on increasing the effectiveness of i-Learn applied in UiTM and applicable to every course which it can motivate all academicians to engage in eL.

Keywords— e-learning, Learning Management System, usefulness.

I. INTRODUCTION

IN the recent years, electronic learning, also called as e-learning, has emerged as an effective learning method. eL is a learning method using electronic applications that makes learning activities become more attractive. Therefore, eL programmes give the flexibilities for the lecturer and students to easily access learning materials at any time and from anywhere with the Internet support [30]. eL has become increasingly more common in Malaysian higher education institutions, and it is expected to grow [31] since it is aligned with the needs of the government initiatives to transform the education system in order to produce more productive and successful graduates that meet RMK-11 aims. Furthermore, every university gives initiatives to appreciate lecturers who are actively involved and applied eL courses as subject matter experts [31]. Lecturers become more aware of the geographical difficulties and encourage students to engage

with eL by ensuring the equity and fairness on every assessment item as individual basis performance [18].

According to [19], the online environment requires different behavioural factors such as asynchronous (time-delayed) interactions from conventional classroom approach. Thus, the behaviours of an educator or a lecturer plays an important role in increasing students' sense of human interaction, instructor presence, caring and connectedness that are aligned with the development of computer-mediated communication tools that has evolved to a new supporting tool of eL such as web conferencing, audio, and visual. Thus, the aim of this study is to determine the correlation between students' understanding and lecturers' readiness towards the development of eL materials. Every academician has viewed and adopted eL as a beneficial element on the process of teaching and learning [14]. Hence, goals for every educator or academician reflected to the efforts taken in fulfilling their self-learning on using eL tools as medium of teaching and learning. A previous study found that, lecturers who wisely prepared and edited course materials would increase students' immediacy especially to an isolation of students who commonly used eL approach [38]. Therefore, this study attempts to determine the factors that contribute to e-learning usefulness.

To sum, this study aimed to answer the research questions as follows:

- H1: Does students' understanding, eL applications and eL materials positively influence eL usefulness?
- H2: What are the factors that contribute to eL usefulness among lectures in UiTM Negeri Sembilan?

II. LITERATURE REVIEW

E-learning (eL) refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance [35][41]. According to [36], eL is also called web-based learning, online learning, distributed learning, computer-assisted instruction, or Internet-based learning. eL involves the use of electronic media such as the Internet, DVD, CD-ROM, video tape, television, and cell phones and it is delivered and managed independently for teaching and learning at a distance [3][10]. Nowadays, eL has become a pillar of success in higher education as it enhances the quality of teaching and learning [4]. This is because the delivery of eL programmes has been recognized as one of the essential alternative of delivery methods for education and training available around the world [3]. In addition, a positive relationship exists between the use of learning technology, the student engagement and the desired learning outcomes [7][33].

Several studies have been conducted on the students' understanding in eL. According to [36], the faculty, administrators and learners found that eL enhances both teaching and learning and can be categorized as targeting either learning delivery or learning enhancement. Furthermore, the interactive learning shifts the focus from a passive, teacher-centred model to one that is active and learner-centred, and offers a stronger learning stimulus. Therefore, the interactivity helps to maintain students' interest

and provides a means for individual practice and reinforcement. Consequently, students who engage in eL tend to score higher marks than those who do not [7].

Studies have consistently demonstrated that students are very satisfied with eL. According to [33], students prefer face-to-face learning to acquire conceptual knowledge in the subject matter, while eL is preferred in acquiring self-regulated learning skills. Students' satisfaction rates increase with eL compared to traditional learning, along with perceived ease of use and access, navigation, interactivity and user-friendly interface design. Moreover, students do not see eL as replacing traditional instructor-led training but as a complement to it, forming part of a blended-learning strategy [9][13][38].

In eL, a good quality of learning environment is one of the factors that contribute to the success of a course. The ease of using the learning management system (LMS) may affect course satisfaction [6][37], performance in the course [22] and the decision to continue or to drop out of a course [8][33]. [29] mentions that self-regulation of learning is an important characteristic of eL courses and students have choices regarding the time, place, and the regulation of learning processes in general. Students may also receive ample opportunities to practice and apply what they are learning [28]. Additionally, the opportunities of eL to exchange socio-emotional information may influence students' engagement, motivation, satisfaction and the decision to continue a course [17][34].

Equally important, very good and attractive materials should be provided to make sure eL can be successfully applied. The eL materials and tools help students to understand better and they can deal with the knowledge that has been gathered [25]. This is because the use of good online tools and materials in education process creates positive effects on the attitudes of students towards lessons and learning [12]. Furthermore, eL platforms further adversely affect lecture attendance as students can easily access eL materials [40]. As a result, eL materials help students to develop thinking abilities and at the same time increase their success level [11][24].

In addition, while the instructors use eL platforms to communicate to their students, the students are able to follow lectures online, interact with instructors, start online discussions through various collaborative tools, submit assignments and check on their academic progress online. Even though the potential benefits of collaborative learning, such as the development of critical thinking skills, co-creation of knowledge and meaning, reflection and transformative learning, these collaborative tools are yet to be put into full utilization. [5][16][27][32]. Learning in an online context that gives students the opportunity to express their own ideas, negotiate meaning, and develop key professional skills like listening, presenting ideas, persuasion, self-direction, self-monitoring and team working [7][15].

III. METHODOLOGY

The purpose of this research was to investigate the eL usefulness towards teaching among UiTM Negeri Sembilan

lecturers. This quantitative study involved lecturers from all faculties in Universiti Teknologi MARA Negeri Sembilan. An online questionnaire was distributed to all lecturers via their staff email and 84 lecturers responded to the survey.

The data obtained from the questionnaire were analyzed using Statistical Package for Social Sciences (SPSS) version 22. Statistical analyses used in this research were correlation analysis and multiple linear regression analysis. There were two objectives identified for this study; RO1: To see the correlation among students' understanding, eL applications and eL materials towards eL usefulness and RO2: To determine the major factors that contributes to eL usefulness among lecturers in UiTM Negeri Sembilan.

The research framework consists of related variables showed in Figure 1. The framework focuses on the factors that could have the influence of the eL usefulness. Those factors represent the independent variables which are students' understanding, eL applications and eL materials. The eL usefulness is identified as the dependent variable in this study. Thus, from the literature review, the research framework was developed to shows the interconnections of all the independent variables with the dependent variable. Therefore, the figure below portrays the framework of this research.

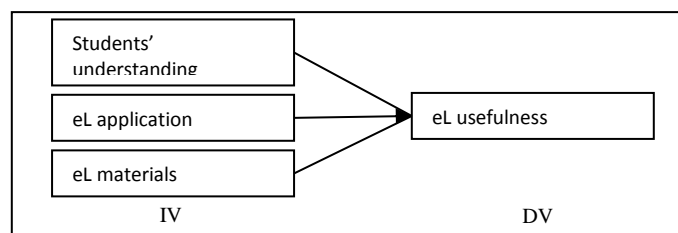


Fig. 1 Framework of the research.

Several steps were involved in this study; Preliminary analysis, checking for the model significance, estimation of the regression model and interpretation of the output.

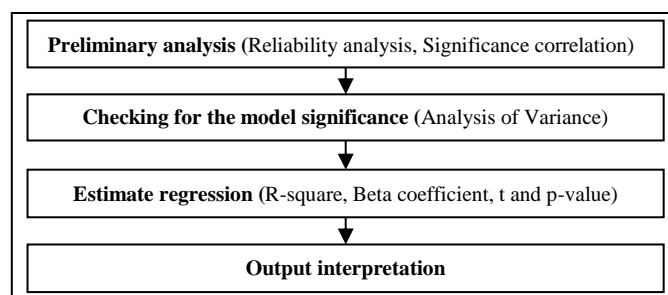


Fig. 2 Theoretical procedure.

IV. FINDINGS AND DISCUSSION

Table 1 represents the descriptive statistics of the respondents' demographic information. The total number of respondents was 84 comprising 20 (23.81%) male lecturers and 64 (76.19%) female lecturers. The highest number of the respondents were from FSG (34.52%). About one third of them had 2 to 5 years of teaching experience (35.71%), followed by 5 to 10 years of teaching experience (28.57%), more than 10 years of teaching experience (21.43%) and less

than 2 years of teaching experience (14.29%). Majority of them (82.14%) had the Internet access at home. Most of them (78.57%) claimed that the university provided a personal computer or a laptop for them. Almost all of them (94.05%) stated that the university provided computer laboratories.

It shows that most of the lecturers are easily accessible to the Internet that could support the implementation of the blended learning approach.

TABLE I
DESCRIPTIVE STATISTICS OF RESPONDENTS' DEMOGRAPHIC

Variable	Category	N	%
Gender	Male	20	23.81
	Female	64	76.19
Faculty	FSKM	25	29.57
	FSR	3	3.57
	FSG	29	34.52
	FBM	4	4.76
	Other	23	27.38
Course	ACIS	4	4.76
	CS	10	11.90
	Language	13	15.48
	Mathematics	10	11.90
	Statistics	3	3.57
	Economics	1	1.19
	Finance	0	0.00
	Law	4	4.76
	Physics	7	8.33
	Sport science	3	3.57
	Chemistry	6	7.14
Years of teaching	Biology	8	9.52
	Microbiology	4	4.76
	Other	11	13.10
	Less than 2 years	12	14.29
	2 to 5 years	30	35.71
	5 to 10 years	24	28.57
	More than 10 years	18	21.43
Have Internet Access at Home	Yes	69	82.14
	No	15	17.86
University provide a personal computer or laptop for lecturers	Yes	66	78.57
	No	18	21.43
University provide computer laboratories	Yes	79	94.05
	No	5	5.95

Data collected were then transferred in the SPSS application for testing the reliability of the instruments used. The reliability analyses were used to verify the internal consistency among variables used in the study. For this test, the Cronbach Alpha obtained for all variables in this test were greater than 0.9. As for the test of the reliability analysis is high, this questionnaire was reliable to be run.

TABLE II
CRONBACH ALPHA (N=84)

No	Items	Total items	α	Role
1	eL Usefulness	7	.967	DV
2	Student understanding	5	.975	IV
3	eL applications	6	.957	IV
4	eL materials	4	.921	IV

IV: Independent variable; DV: Dependent variable

Regarding these particular independent variables, the finding as presented in Table 2 shows that students' understanding, eL applications and eL materials in Spearman's rank correlation coefficient was 0.944, 0.907 and 0.913 respectively with p-value < 0.01. According to [25], the eL materials and tools help students to understand better and they can deal with the knowledge that has been gathered. Therefore, it is concluded that there is a significant strong positive linear relationship between independent variables and eL usefulness.

TABLE III
CORRELATION COEFFICIENTS OF RELATIONSHIPS
BETWEEN INDEPENDENT VARIABLES AND DEPENDENT VARIABLE (N = 84)

Variables	Y	X ₁	X ₂	X ₃
Y eL usefulness				
X ₁ Students understanding	0.944*			
X ₂ eL applications	0.907*	0.867*		
X ₃ eL materials	0.913*	0.860*	0.960*	

*Correlation is significant at the 0.01 level (2-tailed).

Referring to the ANOVA results, the model fits the data because the F statistic was high (505.096) and the corresponding significant value was smaller (p =.000) than alpha (α = .05).

TABLE IV
ANOVA TABLE

Model	Sum of Squares	Degree of Freedom	Mean Square	F	p-value
Regression	21.533	3	7.178	505.096	.000
Residual	1.137	80	0.014		
Total	22.670	83			

IV: Students' understanding, eL applications, eL materials
DV: eL usefulness

TABLE V
COEFFICIENTS

	B	SE B	β	t	p-value
Constant	.057	.078		.735	.465
Student understanding	.496	.050	.517	9.936	.000
eL applications	-.205	.079	-.218	-2.608	.011
eL materials	.686	.080	.703	8.536	.000

Note: R²=0.950

Regression model:

$$y = 0.057 + 0.496x_1 - 0.205x_2 + 0.686x_3$$

Collinearity statistics revealed that tolerance values for student understanding, eL applications and eL materials are more than 0.10 (0.420, 0.742 and 0.592 respectively) and variation inflation factor 2.379, 1.348 and 1.689 which are less than 10 indicates there is no multicollinearity problem. Regression model represents the value of the estimated coefficient where b₀ = 0.057, b₁ = 0.496, b₂ = -0.205 and b₃ = 0.686. The Multiple Linear Regression model purposively employed to explain the eL usefulness among lecturers who have participated in eL in UiTM Negeri Sembilan. The result

of regression as shown in Table 5 indicates that eL usefulness was explained by student understanding (X₁) (t = 9.936, p-value= 0.000), eL applications (X₂) (t= -2.608, p-value=0.011) and eL materials (X₃) (t = 8.536, p-value= 0.000). The use of good online tools and materials in the learning process creates positive effects on the attitudes of students towards lessons and learning [12].

Specifically, one unit increases in students understanding, 0.496 units increase in eL usefulness, indicating that eL helps students to learn better. Meanwhile, one unit increases in eL applications, -0.188 decreases in eL usefulness, indicating that eL applications were not fully used by the lecturers in their teaching sessions and lastly, one unit increases in eL materials, 0.686 increases in eL usefulness, revealing that eL materials uploaded by the lecturers increased the eL usefulness.

In addition, the factor with the largest beta coefficient and t-value was eL materials (β = 0.703, t = 8.536) in which makes this variable becomes the most contributing factor towards eL usefulness. This is followed by students' understanding with beta coefficient and t-value (β = 0.517, t = 9.936) and eL applications with beta coefficient and t-value (β = -0.218, t = -2.608). Therefore, based on the output above, it can be seen that all the independent variables of eL usefulness are significant because their p-values were below than .05, which indicates that all independent variables are associated to the dependent variable. As stated by [27], students are able to follow lectures online, interact with instructors, start online discussions through various collaborative tools, submit assignments and check on their academic progress online. This research shows that students understand using the eL materials and eL applications.

Lastly, with the result of R²=0.95, it means that 95% of the total variation in eL usefulness can be explained by the regression line using the students' understanding, eL applications and eL materials. As a result, the understanding, eL applications and eL materials help students to develop thinking abilities and at the same time increase their success level [11][24].

V. CONCLUSION

The study examined the major factors contributed to eL usefulness among the lectures in UiTM Negeri Sembilan. The results indicate that students' understanding(r=0.944), eL applications (r=0.944) and eL materials (r=0.913) had significant relationship and contribution to eL usefulness among lecturers with p value <0.05. It is means that lecturers at UiTM Negeri Sembilan have adopted eL because they perceived the factors of students' understanding, system applications and materials play important roles in the effective process of teaching and learning. This is consistent with the previous research [7][33] indicating that the usefulness of learning technology, student engagement and desired learning outcomes have positive relationships. The findings of this study may also suggest that eL can enhance the delivery of learning activities among lecturers and students especially in higher learning institutions [36].

However, this study had several limitations. First, the scope for this study was limited only to respondents amongst lecturers in UiTM Negeri Sembilan who have had blended learning experience using i-Learn, the UiTM LMS. Second, the respondents answered these questions based on various or general views on personal experience rather than responding to specific subjects and contents of learning. This study could be improved by using qualitative methods by interviewing several respondents that can explain verbally respondents' experience and satisfaction in using eL from both perspectives between students and lecturers.

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