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Full enforcement of e-Learning during first movement control operation of COVID-19 pandemic: are Malaysian university students ready?

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Abstract

E-Learning has been practising in many countries as one of the teaching and learning processes to enhance pedagogy. COVID-19 pandemic has made it compulsory for students to have virtual classes at full usage for the first time of Movement Control Operation (MCO) from 18 March 2020. Are Malaysian university students ready for e-Learning? Thus, this study aims at determining three variables of attitude, skills, and knowledge related to the e-Learning readiness in having the classes at their own home. A total of 425 questionnaires on Google form were distributed via WhatsApp. Descriptive statistics and inferential analysis of readiness are employed. The finding shows that attitude contributes the most to the student's readiness. There is no difference in respondents' e-Learning readiness between those who stay in rural or town. The majority of respondents are at a moderate level of readiness. This finding will give an insight into the Ministry of Higher Education to consider appropriate actions to ensure the teaching and learning for University learning are not disrupted due to the COVID-19 outbreak.

KEYWORDS: E-Learning, Readiness, Attitude, Skill, Knowledge.

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1. Introduction

The deadly and infectious disease Corona Virus also known as COVID-19, has profoundly influenced the worldwide economy. This fear resounds over the instruction segment all-inclusive. Fiascos and widespread COVID-19 can make a parcel of chaos and pressure; hence, there is essential to consider the innovation profoundly and with due tirelessness to adjust to these fears and anxieties amid such emergencies (Dhawan, 2020). The widespread COVID-19 flare-up constrained all schools and universities to be closed. The Ministry of Higher Education (MoHE) broadcasted that all public and private universities in Malaysia conduct online teaching and learning activities until December 2020 (Malaysian Ministry of Higher Education, 2020). So, students are forced to utilise e-Learning at full usage. The students and lecturers are battling to discover choices to bargain with this challenging circumstance (Rieley, 2020). Favale et al. (2020) emphasised an urgent need for academic institutions to plan smartly. It is unknown if the existing results become vacuous or yield sublinear dynamic regret (Cheng et al., 2019). Since this is an

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unprecedented phenomenon, many issues affect the learning process (Parkes et al., 2014). It is very pertinent for both lecturers and students to understand the current situation of learning. Hence, this study would like to probe students' readiness to fully enforce e-Learning during the first movement control operation of the COVID-19 pandemic.

1.1 E-learning Readiness

Readiness is a learning principle that affects learning (Horzum et al., 2015). E-Learning is one of the main alternatives to learning during the COVID-19 pandemic and the new standard period. Singh and Singh (2017) postulated that e-Learning is significant for the teachers to realise a need to move the students' attitude toward learning readiness in e-Learning by adjusting to technological difficulties, community, and synchronous preparation. Without proper e-Learning readiness, the desired outcome would be a failure (Anshari et al., 2016). E-Learning does not require students and teachers to gather in one place physically. It does not depend on the quality of teachers to deliver learning content but on the quality of digital learning sources and other didactic content. Recent years have seen a significant increase in research on the design and implementation of e-Learning. E-Learning can help students study more effectively. It can also be used in conjunction with the conventional technique. E-Learning also requires creativity among educators, and students alike can soar. During the recent COVID-19 epidemic, corporate and educational institutions' patterns shifted substantially from face-to-face learning and teaching to online learning and teaching (Abudaqa et al., 2021). Chung et al. (2020) found that respondents are generally ready for online learning in a recent study. However, Dietrich and colleagues. (2020) reported that some assumed that the sudden and abrupt change to online learning would consequence in poor transmission due to a lack of training, insufficient internet connection, and little preparation.

1.2 Attitude towards e-Learning

Today's students are digital natives, and they have grown up with technology. They are assumed to have a good grasp of technology. E-Learning appears to be based on the premise that students can learn automatically. Researchers have previously found that the level of student preparation for e-Learning is a crucial element of its implementation (Riwanda et al., 2020). As per Ullah et al. (2017), several studies demonstrated that e-Learning and its reception were broadly influenced by students' attributes, which were viewed as significant e-Learning factors in creating nations. Wang et al. (2001) revealed that students' views toward ICT utilization seem to affect their attitudes toward web-based learning. Zhu et al. (2013) found that the undergrad students, who favoured web-based learning strategy, indicated more significant levels of apparent fulfillment than the individuals who did not. Online learning attitude has a meaningful effect on online learning readiness (Herguner et al., 2020). They examined the impact of e-Learning attitudes on sports sciences students' online learning readiness during the renewal and coronavirus pandemic. They found out that there was a moderately significant and positive correlation between the online attitudes of Turkey's higher education sports sciences students and their online readiness. There is a positive relationship between advanced citizenship behaviours and e-Learning attitude. In addition, Gunnarsson (2001) and Suanpang (2007) uncovered the primary association between students' subject demeanour and their web-based learning attitudes when they took the online course. Also, it has been observed that students' negative anxiety due to the pandemic is reflected in their e-Learning processes. However, in any case, it generally appears that advanced citizenship behaviour computerised learning handle can be a positive reaction to the COVID-19 closure period (Akcil & Bastas, 2020). Husin and colleagues (2021) reiterated a requirement to form a decent online learning readiness by generating a positive online learning attitude.

1.3 Skill in e-Learning

Ebner et al. (2020) studied the concept of e-Learning readiness, confirming that ICT and technical skills are crucial. Singh and Singh (2017) proposed that skills are a blend of capacity, information, and experience that empowers a person to improve their presentation. Abilities are the foundation of what empowers people to be effective in their day-by-day exercises, be it work, interests, or instructive undertakings. Meanwhile, Bennett (2017) stated that effective e-Learning strategies could change this mindset by developing more profound learning skills because liquid learning advances students' basic intuition to participate in basic reasoning. The accentuation of students' exercises must change from uninvolved to dynamic learning. Tending to students from one point of convergence would not urge them to deconstruct the exercise standards for themselves. E-Learning fortifies this idea by broadening the study hall limits and empowering web backing and 24-hour access to instructive assets. Then, active interest strengthens the main topic as conventional learning paints core subjects with extremely wide brushstrokes. Widodo and colleagues (2020) suggested that student online readiness comes from the aspects of equipment capability, technology skills, self-directed learning skills, motivation, and perceived usefulness. In a similar vein, Rohayani (2015) carried out a literature review on factors for measuring e-Learning readiness in higher education and found that skills and attitudes are the most significant factors influencing e-Learning readiness.

1.4 Knowledge of e-Learning

The effect of mobile and wireless technology breakthroughs and popularity made e-Learning a new direction (Senthil Kumaran, 2015). The current generation must be very well-versed, and IT savvy in the technology to be in the mainstream of life, especially in education. As Downes (2005) pointed out, this trend has attracted the attention of several pundits, and these "digital natives" like internet users for their daily routines. Chatti and colleagues (2007) believed that experts and knowers are people with the necessary skill to accomplish better outcomes. Pappas (2016) documented that the information is one of the most significant blessings you can offer e-Learning to students. It permits them to defeat common hindrances, accomplishes their objectives, and satisfy their long-lasting dreams. Information is a fantastic thing that separates hindrances. Make nitty-gritty assignment breakdowns are general outlines that can improve appreciation. Be that as it may, e-Learning students ordinarily need a bit-by-bit manual to complete the undertaking. Analyse all aspects of the procedure to make an unmistakable and compact e-Learning instructional exercise for e-Learning students. In contrast, Alipio (2020) showed that most Filipino students are reluctant to participate in E-learning activities during this COVID-19 pandemic due to the lack of digital knowledge or skill, which eventually affects their academic performance. To sum up, based on the presented discussion, the online readiness framework is illustrated in Figure 1.

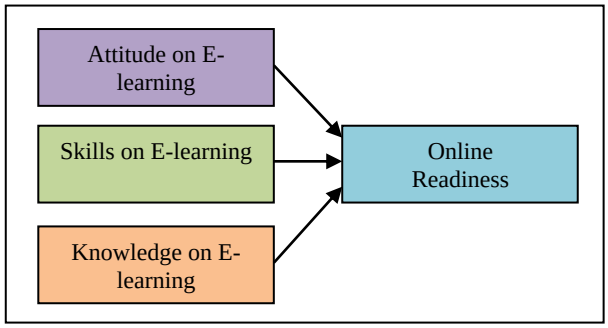

Figure 1 - Conceptual Framework.

2. Materials and Methodology

This study collected the data by using a survey questionnaire. The data was used to test students' attitudes, skills, and knowledge of their readiness to use e-Learning during the first MCO from 18 March to 31 March 2020. A survey questionnaire was uploaded to Google Form and distributed to public and private universities around Malaysia via the WhatsApp message application. The respondents circled their reactions to each question that best described their level of agreement with the statements. Out of the 500 distributed surveys, this study achieved 425 usable sets.

After data is collected, the data analysis is embarked with the descriptive analysis, T-test, and regression analysis. The descriptive study analysed the frequency of the demographic factors and e-Learning readiness. The T-test analysis was used to examine the differences between two groups of students from rural and urban areas. In contrast, regression analysis aims to determine the factors influencing e-Learning and the readiness of students.

2.1 The Instrument

The questionnaire is formulated based on specific research objectives. It is divided into five main parts: Section A comprises the demographic profile of the respondents. The other sections contain items related to dependent and independent variables. The set of questionnaires is formulated based on the chosen variables from the previous studies, which are e-Learning readiness (Tasir et al., 2006); attitude toward E-learning (Ullah et al., 2017); skills in e-Learning (Singh & Singh, 2017); and knowledge of e-Learning (Hansen, 2008). The respondents were asked to indicate their perceptions level on a 7-point Likert Scale, ranging from Strongly Disagree (1) to Strongly Agree (7). Finstad (2010) pointed out that 7-point scale Likert items are more appropriate for electronically transmitted and otherwise unsupervised usability questionnaires since they offer a more precise indicator of a participant's accurate assessment.

Table 1 depicted the reliability analysis that the Cronbach alpha value ranged from 0.814 to 0.903, indicating all variables' reliability is good.

Variables	Cronbach Alpha	No of Items
E-learning Readiness	.814	5
Attitude on E-learning	.940	5
Skills in E-learning	.933	5
Knowledge of E-learning	.903	5

Table 1 - Reliability Statistics.

3. Results

Altogether, this study distributed 500 questionnaires; and only 425 surveys (response rate is 85%) were returned for further analysis. Table 2 presents the demographic profile of university students – more female respondents (76.2%) than males (23.8%). The result shows that 383 respondents are understudies (90.1%) aged 19 to 24 years old. Nonetheless, there were 28 respondents (6.6%) from 25-29 years old and five students (1.2%) from 30-34 years old. At that point, the

equalisation of nine understudies 35-39 years old is (2.8%). The ethnic Malay understudies, who were the most noteworthy among the rest of e-Learning readiness, are 345 respondents (81.2%). In the interim, Indian respondents were 29 respondents (6.9%) from among university students. There are only five Chinese respondents (1.2%). In comparison, the Bumiputera respondents are 43 respondents (10.1%).

Next, the results show respondents' data from public universities (IPTA) and private (IPTS) universities in Malaysia. The majority of the respondents were from public universities, with almost 74.8% out of 425 students. From private universities, 197 (25.2%) of the overview took an interest in this review respondents from the e-Learning readiness. The majority of the respondents are doing a Degree program, as expressed in 304 understudies (71.5%). Be that as it may, 55 understudies (12.9%) reacted to appropriate polls from the recognition program—the Master and Ph.D. as expressed by just six understudies (1.4%). Moreover, 54 understudies (12.7%) reacted to establishments.

It delineates students' recurrence from arranging gave, which is increasingly respondent use Celcom line to web-based learning is 100 respondents with 23.5%. Be that as it may, 91 respondents (21.4%) used the Maxis line. Consequently, 89 respondents (20.9%) used U-Mobile just in case than Maxis. Notwithstanding, organise Digi just 57 respondents (13.4%) and 52 respondents utilising Telekom Malaysia is (12.2%). Thirty-six respondents (8.5%) utilise other systems to arrive at internet learning. Furthermore, the current respondent status of studies for full-time is higher (96%) than part-time (4%). The respondents must state their place during their e-Learning process, either in rural or town areas. The town is the most elevated respondent imprint of e-Learning status with 274 minds (64.5%) respondent player than provincial e-Learning 151 respondents with e-Learning (35.5%).

Other than that, respondents are from all states in Malaysia. The most noteworthy respondent comes from Selangor, with 157 respondents' minds (36.9%). Sarawak is the second most elevated respondent with 49 students (11.5%), and Perak with 22 respondents (5.2%). Terengganu and Pahang reported the same recurrence with 20 respondents (4.7%), while Kelantan and Kedah likewise the same recurrence with 25 respondents (5.9%). Further, respondents with e-Learning availability from Sabah and Pulau Pinang are similar with eight respondents (1.9%). Minority of the respondents are from Johor (4.9%), Wilayah Persekutuan (5.2%), Negeri Sembilan (3.8%), and Melaka (0.9%). The most minimal respondent is from Perlis, with just two respondents (0.5%). For the most exciting part, the majority of the respondents revealed that they like to learn using e-Learning (61.9%) compared to those who did not want to use it (38.1%).

Demographic Profile	Frequency	Percentage
Gender		
Male	101	23.8
Female	324	76.2
Age		
19-24 years	383	90.1
25-29 years	28	6.6
30-34 years	5	1.2
35-39 years	9	2.1
Ethic		
Malay	345	81.2
Indian	29	6.8
Chinese	5	1.2
Bumiputera	43	10.1
International	3	0.7
Type of University		
IPTA	318	74.8
IPTS	107	25.2
Educations level		
Foundations	54	12.7
Diploma	55	12.9
Degree	304	71.5
Master	6	1.4
PhD	6	1.4
Do you like to learn using online learning		
Yes	162	38.1
No	263	61.9
Network provided		
U-Mobile	89	20.9
Celcom	100	23.5
Maxis	91	21.4
Digi	57	13.4
Telekom Malaysia	52	12.2
Other	36	8.5
Current Status of studies		
Full time	408	96.0
Part-time	17	4.0
Your state that you are staying right now		
Perlis	2	0.5
Kedah	25	5.9
Selangor	157	36.9
Pulau Pinang	8	1.9
Kelantan	25	5.9
Terengganu	20	4.7
Pahang	20	4.7
Johor	21	4.9
Melaka	4	.9
Negeri Sembilan	16	3.8
Sabah	8	1.9
Sarawak	49	11.5
Perak	48	11.3
W. Persekutuan	22	5.2

Table 2 - Demographic Profile of Respondents.

3.1 Descriptive Statistics of e-Learning Readiness

Table 3 illustrates the highest mean of the e-Learning readiness variable. The item "I can manage my e-Learning time effectively" has the highest mean value with 4.08 (SD = 1.647), while the lowest mean is the item "I am willing to spend 8 to 10 hours a week on e-Learning, where the mean is 3.53 (SD = 1.735).

3.2 T-Test Analysis

Table 4 depicts the differences in e-Learning readiness between those who stay in rural and in town. The result shows no significant difference in the e-Learning readiness for both groups of students. Therefore, there is no difference between the locations of these respondents. Their e-Learning readiness is the same.

3.2 Regression Analysis

Table 5 reveals the factors influencing students' readiness with e-Learning in Malaysia during the First Movement Control Operation of the COVID-19 Pandemic. This table depicts that the largest beta value of the standardised coefficient is attitude e-Learning (0.409), followed by skills (0.295) and knowledge (0.150). All variables which consists of attitude on e-learning (p-value < .05), skills on e-Learning (p-value < .05), and knowledge on e-learning (p-value < .05) were positively influence student's readiness, it is statistically significant at 1% level. The R^2 value shows that 0.598 or 59.8% of the students' e-learning readiness can be explained by attitude toward e-Learning, skills in e-Learning, and knowledge of E-learning.

Figure 2 depicts the level of students' e-Learning readiness among 425 respondents. The result reveals 40 (9.4%) students with a scale of less than 2.00, which indicates low readiness. Further, the moderate level of readiness (scale between 2.01 and 3.00) has a high frequency of students, with 271 (63.8%) students. Finally, 114 (26.8%) students have a high level of readiness (scale between 3.01 and 4.00). Overall, this study reveals that most of the respondents are at a moderate level of readiness in using e-Learning.

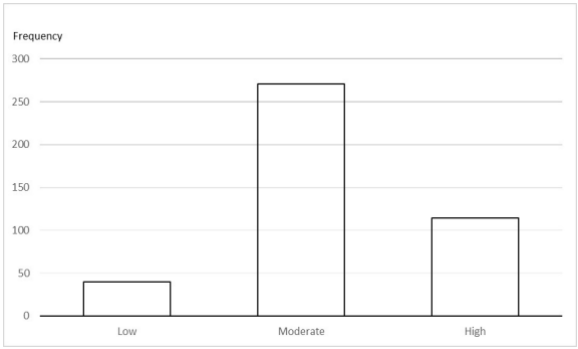

Figure 2 - Level of E-Learning Readiness.

	N	Mean	Std. Deviation
1. I can manage my e-Learning time effectively	425	4.08	1.527
2. I can interact with classmates using real-time communication tools.	425	4.39	1.583
3. I am willing to spend 8 to 10 hours a week on e-Learning.	425	3.53	1.735
4. I have a high frequency of network to access portal learning.	425	3.78	1.809
5. I can efficiently complete assignments within a set time frame.	425	4.07	1.686

Table 3 - Descriptive Statistics of e-Learning Readiness.

E-Learning Readiness	N	Mean	F	SIG
Rural	151	3.8185	1.836	.176
Town	274	4.0569		

Table 4 - T-test of Those Who Stay in Rural and Town toward e-Learning Readiness.

Variable	Standardised Coefficients Beta	t	Sig	R^2
Attitude on e-Learning	.409	9.125	.000**	0.598
Skills on e-Learning	.295	5.733	.000**	
Knowledge of e-Learning	.150	2.707	.007**	

Note: $p < 0.05$; $^{**}p < 0.01$

Table 5 - Multiple Regression Result.

4. Discussion and Conclusions

Students' attitudes, skills, and knowledge are crucial to test students' readiness in having e-Learning classes. The results showed only 38.1 percent of the respondents like to learn online, and more students (61.9%) do not want e-Learning. Instead, they prefer face-to-face. Probably they are more comfortable with traditional classes whereby they could ask any questions or clarification directly to the lecturers in the class. Somehow, this is the first and unprecedented phenomenon of the total usage of online learning. As time goes by, they will have time to get used to this new learning norm. Whether they stay in rural or town, their e-Learning readiness is the same. E-Learning has its advantages, such as linking from different resources in a few shifting formats and an effective method of having courses on the web. Due to its benefit and adaptability, the resources are accessible. Any place so long the internet connection is available.

Results showed that all the variables are influencing students' e-Learning readiness. Attitude plays the most prominent role. The skills and knowledge areas are necessary for e-Learning, where students can be knowledgeable and tend to communicate effectively during the learning process. It is no surprise that the findings showed that most of the respondents had a moderate level of e-Learning skills; after all, it is the first time MCO has ever happened before. The results could be different if the study is conducted during later stages of MCO, whereby everyone already gets used to MCO's idea and more knowledge and experience gathered along the way.

In conclusion, this study aims to test students' readiness to continue their e-Learning, especially in an emergency, such as a COVID-19 pandemic this year. All education industries must take steps to continue student education. The results show that all variables are important to e-Learning readiness. And attitude factor is the most crucial one in determining students' e-Learning readiness in having classes online. Behaviour is very influential in e-Learning, whether students can adapt or not. There are many challenges to have e-Learning faced by either the students or the lecturers themselves. Despite the need to have all the classes conducted online, the readiness level is still moderate during the first MCO. This study would be a good indicator for the lecturers and the policymakers in the Ministry of higher education to enhance the teaching preparedness to ensure the teaching and learning process runs smoothly and not to be disrupted during this COVID-19 pandemic. Life, teaching, and learning have to go on.

Datasets and Reproducibility

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

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