Acceptance Towards e-Learning Among University Students During Covid-19'S Movement Control Order

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Abstract: The implementation of e-learning is highly demanded during the Covid-19 pandemic outbreak. It has been developed to overcome barriers associated with time, space, or geographical location that prevent the students from attending an-on campus course. Overall, previous literature highlighted the benefits and disadvantages of e-learning among school and university students. However, limited studies have evaluated the acceptance level of university students towards e-learning during a restricted environment like a state of emergency like Movement Control Order (MCO) during the Covid-19 pandemic. Therefore, this study aims to explore the acceptance level towards e-learning based on different locations and years of study and to compare the mean difference of acceptance level towards e-learning during the Covid-19 movement control order. A total of 151 undergraduate physiotherapy students were recruited in this study. A quatitative approach was employed through a questionnaire as the research instrument. The findings revealed both urban and rural regions demonstrated moderate acceptance towards e-learning. Students from the first year until the fourth year also showed a moderate acceptance level towards e-learning. Nevertheless, there were no mean differences between locations and years of study with students' acceptance level towards e-learning. Thus, the acceptance towards e-learning among Physiotherapy students were not affected based on the years of study and geographical locations.
Keywords: acceptance, attitude, e-learning, location, years of study.

INTRODUCTION

The recent spreading of Covid-19, a novel virus, prompted every government in the world to impose lockdowns, physical distancing, avoiding face-to-face interaction, and restrictions on immigration (Kapasia et al., 2020). Thus, the implementation of online classes or e-learning at every educational institution is highly demandable. Malaysia is not excluded from the Covid 19 pandemic outbreak (Azlan et al., 2020). However, the success of e-learning implementation depends on the student and instructor's performance and interaction (Hassan & Bao, 2020). E-learning can be defined as education that includes electronic equipment and tools with the interactivity between the people involved in the learning process, such as among lecturers and students (Mahajan, 2018).

E-learning has been developed to overcome barriers associated with time, space, or geographical location that prevent the students from attending an-on campus course (Mamattah, 2016). To implement e-learning, three components are needed: technological tools, software, and the internet (Adams et al., 2018). The current e-learning system has been updated with the implementation of 3D simulations, computer programs, video and telephone conferencing, and real-time online discussion compared to decades before using televisions and overhead projectors in classrooms (Al-sammarraie et al., 2019). E-learning also provides flexibility in terms of time and location (Eryilmaz, 2015). Ahmad & Chua (2015) suggested that e-learning allows a faster transmission and updating of teaching and learning material and encourages interactive communication between lecturers and students. In addition, e-learning reduces the educational cost via the reuse of education, manifesting its cost-effectiveness advantage (Al-sammarraie et al., 2019).

Despite these advantages, a study by Chang, Hung, & Lin (2015) reported that students prefer a physical classroom as it provides a formal learning environment. Lack of face-to-face interactions due to the changes in the original learning environment may negatively influence student motivation towards e-learning (Chang, Hung & Lin, 2015). A study by Ullah (2017) reported that students prefer attending traditional classrooms due to feelings of isolation and loneliness when they were required to face a computer screen instead of having interaction with their lecturers and peers. In addition to

that, e-learning is technology-dependent, which requires certain devices with a minimum specification and high bandwidth to transfer course material (Al-sammarraie et al., 2019). Some students might not be able to access or own the whole set of technologies due to cost and geographical constraints (Mamattah, 2016).

Moreover, some of the e-learning tools and software have unsustainable characteristics. For example, some of the software might not be compatible with certain tools (Al-sammarraie et al., 2019). Apart from that, e-learning still depends on human support to guide the student (Al-sammarraie et al., 2019). Students with a lack of information technology (IT) skills sometimes might not be able to enjoy the e-learning and updates in technologies (Al-sammarraie et al., 2019; Adams et al., 2018). Lean et al. (2018) proposed that poor network connection is the primary barrier to e-learning. This is because slow network connection speed may discourage students from studying online.

Based on the mentioned e-learning disadvantages such as being separated physically from the university and peers, the student might react differently towards e-learning. Furthermore, not all students have been equipped with the proper tools and IT skills (Ngampornchai & Adams, 2016). In some rural areas in Malaysia, some of the technology infrastructure and information related to e-learning and IT skills are not well developed due to lack of computers and software availability and incompatibility between software and hardware (Wong et al., 2016). Besides, studying a physiotherapy course requires a student to acquire specific practical skills and fulfill certain clinical posting hours. However, the Covid-19 lockdown has prevented universities and other educational institutions from conducting face to face teaching and learning activities which limit the student's opportunity to learn about certain practical skills and attend clinical posts. It is essential to explore how physiotherapy students are coping with e-learning during the Covid-19 pandemic lockdown. Therefore, this study aims to explore the acceptance level of undergraduate Physiotherapy students from UiTM towards e-learning based on different locations and years of study and to compare the mean difference between the acceptance level towards e-learning and locations and years of study during the Covid-19 movement control order.

METHODOLOGY

The quantitative approach was employed through the use of a self-administered close-ended questionnaire adapted from Lim, Hong, Tan, (2008) as the study instrument. All questions were transferred onto a Google Form. The first part collected the subjects' demographic information. The second part collected data on factors of acceptance using a numerical 5-point Likert scale; strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). There were four factors overall-technology and system, interactive applications, instructors' characteristics and students' behavior and attitude.

This cross-sectional survey was conducted during the academic year of 2020-2021 among undergraduate physiotherapy students of Universiti Teknologi MARA (UiTM). They were approached through social media. Subjects recruited in this study are full-time undergraduate physiotherapy students pursuing a Bachelor's Degree (Hons) or a Diploma in Physiotherapy at UiTM Puncak Alam and UiTM Bertam. Subjects recruited were from the first until the fourth year of study and are able to understand English. Part-time students are excluded from this study.

The factors in this questionnaire were tested reliable since the Cronbach's Alpha coefficient ranges from 0.782 to 0.851 (Lim, Hong & Tan, 2004). A value of Cronbach's Alpha that is equal or greater than 0.7 (Sakarji et al., 2019) indicates that this research instrument was appropriate and reliable. Data was analysed using SPSS software version 20 (SPSS 20). Demographic data was calculated using descriptive statistics. Meanwhile, independent t-test was used to evaluate the level of acceptance towards e-learning and mean differences between the two locations. The one-way analysis of variance (ANOVA) was used to compare the mean difference between Physiotherapy acceptance levels towards e-learning and years of study.

RESULT

Table 1 shows the demographic data of the 151 study subjects. All subjects were from the Physiotherapy department in UiTM. A majority of the subjects are female, with 86.8%, and the male gender formed the minority, at 13.2%.

The mean age of the total subjects was 21.78. 72.2% were students from the Bachelor's Degree while the other 27.8% were Diploma students. The subjects are students from the first-year (22.5%), second-year (21.9%), third-year (23.2%), and fourth year of study (32.5%). The number of subjects in terms of the location was almost equal between the urban (49.0%) and rural (51.0%) areas.

Table 2 shows the descriptive statistics according to the subject's location. 44.4% had above 10 years of experience in using the internet, 35.1% had 7 to 10 years, 15.9% had 4 to 6 years, and only 4.6% of them had 1 to 3 years of experience. Half of the students from the urban areas have above 10 years of experience while only 38.9% students from rural areas have above 10 years of experience. Most of the students (66.2%) reported having moderate internet accessibility at home, 29.1% have strong internet accessibility, and 4.6% have low internet accessibility. 44.6% of urban students have strong accessibility compared to rural students with only 14.3% claiming to have strong internet accessibility at home. As for access tools, 51.7% use mobile data, 43.7% use modem, and 4.6% use local area connection. More than half (59.5%) of students from the urban areas use modems to access the internet while the majority (68.8%) from rural areas purchased mobile data to connect to the internet. Almost all of the participants 95.4% claimed to know e-learning, while the rest (4.6%) do not know about e-learning. Only 1.4% students from the urban areas claimed to know nothing about e-learning, while 7.8% of the rural students have no knowledge on e-learning.

Particularly for each factor, students had shown a moderate level of acceptance for the factor "technology and system" with a mean of 3.59 (Table 3). In particular, the system allowed easy access to information (4.02), the configuration color and background were clear and harmonious for the system (3.82), there was information credibility in the system (3.77), the guidance screen was clear and easy to use (3.87), IT infrastructure was reliable and secure (3.71), there was adequate investment in infrastructure to support electronic performance (3.66), the screen layout and design were appropriate (3.90), they were rarely disconnected during online tutorial (3.05) and satisfied with browsing speed (3.23) but rated 2.90 for the question "I do not experience problems while navigating".

As shown in Table 4, students rated a moderate level of acceptance

towards e-learning in terms of interactive applications with a mean of 3.51. They thought sharing knowledge through online discussions was a good idea (3.58) and online discussions enabled them to exchange ideas and comments (3.52). In addition, they also gained benefit from using interactive applications (3.56), were able to ask questions and receive answers (3.58), felt that browsing classmates' works helped to reflect own shortcoming (3.72), thought sharing knowledge through online discussion was time consuming (3.40), had discussions with their course-mates via e-learning system (3.65), thought uploading coursework was easy (3.46), thought browsing classmates' works helped to improve the quality of own work (3.68), thought uploading coursework was an appropriate method (3.74), browsed peers' feedback of most of their classmates (3.34) but rated 2.90 for the questions "able to concentrate on the quality of learning".

Table 5 revealed that students also had a moderate level of acceptance towards e-learning in the factor of "instructors' characteristics" with a mean of 3.85. They agreed that : their instructors' knowledge on using the internet technology affected efficiency of online learning (4.04), were friendly and approachable (3.97) and were easily contacted (3.93). Additionally, their instructors : explained how to use the website at the beginning of the semester (3.65), encouraged student interactions (3.99), provided sufficient learning resources online (3.89), solved emerging problem efficiently (3.86), provided fast feedbacks to queries in the discussion forum (3.89) and replied e-mail queries rapidly (3.63). They were also enthusiastic in teaching and explaining via the web (3.91) but did not intervene unless students asked for the correct answer (3.64).

The scores in Table 6 on factors related to students' behaviors and attitudes show that students demonstrated a moderate level of acceptance towards e-learning with a mean of 3.58. They believed in their capability to interact with technology (3.72) and ability to cognitively engaged in doing e-learning activities (3.40). They were also willing to participate in e-learning activities (3.48), had the initiative and motivation to learn and use the system (3.56), had high level of self-confidence in using the system (3.52) and were satisfied with the time and place flexibility of the systems (3.46). However, they were anxious in completing their studies (3.94).

An independent t-test was calculated to measure the level of acceptance

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towards e-learning and the mean difference between locations while ANOVA was used to calculate the level of acceptance and the mean different between years of studies, as shown in Table 7. The overall mean score of 1.0 to 2.9 indicates low level, 3.0 to 3.9 moderate level, and 4.0 to 5.0 high level of acceptance towards e-learning (Lim, Hong, Tan, 2008). From the table, the acceptance level towards e-learning among students who lived in urban areas was slightly higher than those in rural areas, (3.67) and (3.58), respectively. These indicate that urban and rural regions demonstrated a moderate acceptance towards e-learning. However, there was no significant difference between the mean acceptance towards e-learning in urban and rural areas (p= 0.154). Table 8 shows that the subjects from the first until the fourth years of study had moderate levels of acceptance with the first-years having a score of 3.68, second-years with 3.67, third-years with a 3.64 and followed by the fourth-year students with 3.61. However, the analysis of variance showed that years of study on students' acceptance level was not significant, since the p-value was 0.885.

Table 1: Subjects' characteristics

Variable	n	%	Min	Max	Mean ± SD
Age			18.0	25.0	21.78± 1.74
Gender					
Male	20	13.2			
Female	131	86.8			
Level of study					
Bachelor's Degree	109	72.2			
Diploma	42	27.8			
Year of study					
First-year	34	22.5			
Second-year	33	21.9			
Third-year	35	23.2			
Fourth-year	49	32.5			
Number of courses taken			2.0	9.0	6.35± 2.57
Location					
Urban	74	49.0			
Rural	77	51.0			

Table 2: Demographic data based on location

Variable	N	%	Urban (n)	%	Rural (n)	%
Years of experience in using the internet						
1-3 years	7	4.6	3	4.1	4	5.2
4-6 years	24	15.9	10	13.5	14	18.2
7-10 years	53	35.1	24	32.4	29	37.7
Above 10 years	67	44.4	37	50.0	30	38.9
Internet accessibility at home						
Strong	44	29.1	33	44.6	11	14.3
Moderate	100	66.2	40	54.1	60	77.9
Low	7	4.6	1	1.3	6	7.8
Availability of access tool						
Modem	66	43.7	44	59.5	22	28.6
Local area connection	7	4.6	5	6.8	2	2.6
Mobile data	78	51.7	25	33.7	53	68.8
Knowledge on e-learning						
Yes	144	95.4	73	98.6	71	92.2
No	7	4.6	1	1.4	6	7.8

Table 3: Response to factor of acceptance towards e-learning: Technology and system

Technology and System	Mean ± SD	Min	Max
The system allows easy access to information	4.02 ± 0.73	2.00	5.00
The configuration colour and background are clear and harmonious for the system	3.82 ± 0.71	2.00	5.00
There is information credibility in the system	3.77 ± 0.72	2.00	5.00
The guidance screen is clear and easy to use	3.87 ± 0.68	2.00	5.00
The IT infrastructure is reliable and secure	3.71 ± 0.72	2.00	5.00

There is adequate investment in infrastructure to support electronic performance	3.66 ± 0.75	2.00	5.00
The screen layout and design are appropriate	3.90 ± 0.67	2.00	5.00
I am rarely disconnected during online tutorial	3.05 ± 1.16	1.00	5.00
I am satisfied with the browsing speed	3.23 ± 1.02	1.00	5.00
I do not experience problems while navigating	2.90 ± 1.14	1.00	5.00
Overall	**3.55 ± 0.47**		

Table 4: Response to factor of acceptance towards e-learning: Interactive applications

Interactive applications	Mean ± SD	Min	Max
I think sharing knowledge through online discussions is a good idea	3.58 ± 0.87	1.00	5.00
Online discussions enable students to exchange ideas and comments	3.52 ± 0.90	1.00	5.00
I benefit from using interactive applications	3.56 ± 0.79	1.00	5.00
I am able to ask questions and receive answers	3.58 ± 0.83	1.00	5.00
Browsing classmates' works helps me reflect on my shortcomings	3.72 ± 0.76	1.00	5.00
I think sharing knowledge through online discussions is time consuming	3.40 ± 0.87	1.00	5.00
I am able to concentrate on the quality of learning	2.90 ± 0.97	1.00	5.00
I have discussions with course mates via the e-learning system	3.65 ± 0.90	1.00	5.00
Uploading coursework is easy	3.46± 0.90	2.00	5.00
Browsing classmates' works helps improve the quality of my own work	3.68 ± 0.79	1.00	5.00
Uploading coursework is an appropriate method	3.74 ± 0.75	2.00	5.00
I browse the peer feedbacks of most of my classmates	3.34 ± 0.87	1.00	5.00
Overall	**3.51 ± 0.52**		

Table 5: Response to factor of acceptance towards e-learning: Instructors characteristics

Instructors' characteristics	Mean/SD	Min	Max
The instructors' knowledge on using the internet technology affects the efficiency of online learning	4.04 ± 0.74	2.00	5.00
The instructors are friendly and approachable	3.97 ± 0.70	2.00	5.00
The instructors are easily contacted	3.93 ± 0.71	2.00	5.00
The instructors explain how to use the website at the beginning of semester	3.65 ± 0.81	1.00	5.00
The instructors encourage student interactions	3.99 ± 0.72	2.00	5.00
The instructors provide sufficient learning resources online	3.89 ± 0.73	2.00	5.00
The instructors solve emerging problems efficiently	3.86 ± 0.72	2.00	5.00
The instructors provide fast feedback to queries in the discussion forum	3.89 ± 0.75	1.00	5.00
The instructors are enthusiastic in teaching and explaining via the web	3.91 ± 0.75	2.00	5.00
The instructors reply email queries rapidly	3.63 ± 0.81	1.00	5.00
The instructors do not intervene unless students ask for the correct answers	3.64 ± 0.75	1.00	5.00
Overall	**3.85 ± 0.53**		

Table 6: Response to factor of acceptance towards e-learning: Students' behaviours and attitudes

Students' behaviour and attitudes	Mean ± SD	Min	Max
I am anxious in completing my degree	3.94 ± 0.93	1.00	5.00
I belief in my capability to interact with technology	3.72 ± 0.79	2.00	5.00
I am cognitively engaged in doing the e-learning activities	3.39 ± 0.76	1.00	5.00
I am willing to participate in e-learning activities	3.48 ± 0.86	1.00	5.00
I have the initiative and motivation to learn and use the system	3.56 ± 0.84	1.00	5.00

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I have a high level of self-confidence in using the system	3.52 ± 0.73	2.00	5.00
I am satisfied with time and place flexibility of the system	3.46 ± 0.85	1.00	5.00
Overall	**3.58 ± 0.47**		

Table 7: Acceptance level towards e-learning based on locations

Variable	Rural (n = 74) Mean± SD	Rural (n = 77) Mean± SD	Mean diff. (95% CI)	t-stats (df)	P-value
Acceptance	3.67± 0.42	3.58± 0.37	0.09(-0.04, 0.22)	1.43 (149)	0.154

Table 8: Acceptance level towards e-learning based on years of study

Variables	n	Mean±SD	F-stats (df)	P value
Year of study				
First-year	35	3.68± 0.36	.216 (3;147)	.885
Second-year	31	3.67± 0.47		
Third-year	35	3.64± 0.38		
Fourth-year	50	3.61± 0.43		

DISCUSSION

The findings show that students who lived in urban areas have longer years of experience (more than 10 years) of using the internet and only one student claimed to have no knowledge on e-learning compared to the students living in the rural areas, with seven students having no idea on e-learning. Besides, internet accessibility also seemed to be stronger in urban areas. The majority of the students in rural areas experienced moderate internet accessibility at home. In terms of access tools, most students from urban areas used modems to connect to the internet followed by mobile data. Meanwhile, those in the rural areas tended to rely on mobile data. According to Azlan, et al., (2020), the rural areas in Malaysia had comparatively lower quality of internet connectivity compared to those who lived in the urban areas. Some of them with poverty issues had to depend

completely on prepaid mobile internet data plans (Azlan, et al., 2020). Even though private telecommunication companies had collaborated with the Malaysian government to offer 1 Gigabyte free broadband data for the use of e-learning, students still found the data was insufficient especially for lectures using platforms such as Google Meet, Zoom or Webex (Chung et al., 2020). The limited internet access might interfere with the process of e-learning, causing students to not receive instructions properly (Hasan & Bao, 2020) and delay the time for the task submission (Selvanathan et al., 2020). Hence, it is believed that students in urban areas are most likely to gain more benefits of e-learning than those in rural areas (Selvanathan et al., 2020).

This study also attempted to identify the level of the acceptance towards e-learning among students in rural and urban areas and to explore if there is any significant difference between those two locations. Generally, our findings show that students in rural and urban areas have a moderate level of acceptance towards e-learning with a slightly higher mean in urban areas as compared to rural areas. In addition, a comparison between mean years of study on students' acceptance level was also carried out. Students from the first year until the fourth year showed a moderate acceptance level towards e-learning. However, the means of acceptance between locations and years of study were not significantly different. These findings were supported by Thakkar et al., in 2017 who found no statistically significant difference in the positive attitude towards e-learning between rural and urban engineering students during a normal situation. A recent study done during the pandemic by Malkawi (2020) observed high and positive satisfaction levels and attitude of undergraduate students for both locations but they do not significantly differ between the two areas. In addition, similar findings were identified in high school students. Students' perception in rural areas was relatively high as in urban areas and no significant difference was found except for the students in urban areas that tended to feel more at ease when utilizing online learning as compared to the rural students (Sulisworo et al., 2020). However, there were studies that obtained the opposite results. Alipio in 2020 stated that students in urban regions were more ready for e-learning during the pandemic than in rural areas. Urban students even performed better than students in remote areas in terms of learning outcomes (Panyajamorn et al., 2018).

Overall, the students rated the highest moderate mean for instructors' characteristics factor (3.85) among all three factors of acceptance towards e-learning which might indicate instructors' characteristics as the biggest contributor for the moderate level. The second highest was on behavior and attitude (3.58). Eventhough the students believed in their ability to deal with technology, they were still very concerned about graduating successfully. The third highest was on technology and system (3.55) and followed by interactive application (3.51). They perceived that lecturers' knowledge influenced a successful e-learning process. Their lecturers were friendly and readily available when contacted. They were passionate in teaching and explaining and encouraged students' active communication. Furthermore, they also agreed the system allowed them to get credible information easily and were satisfied with the setting of the system. Nevertheless, they had trouble concentrating on the quality of learning and were still inseparable from being interrupted while navigating. They found that browsing classmates' works using the interactive application was beneficial to reflect their shortcomings and improve the quality of work.

Puljak et al. in 2020 who discovered positive results in health sciences students' attitude and concerns towards e-learning, also found that most of the students were generally satisfied with their instructors. They gave fast feedback, gave instructions that were tailored to e-learning, showed effort to ensure their students could follow the new learning method and verified their students' understanding through feedback. In addition, the lecturers provided adequate teaching material and adjusted well to the e-learning method. Correspondingly, students who positively accepted e-learning would acknowledge instructors with good skills as enablers of e-learning (Ibrahim et al., 2021). The difficulty to interrupt the lecturers during class would cause the students to have high dissatisfaction towards e-learning (Selvanathan et al., 2020). Hence, it can be assumed that the students' perception towards e-learning was strongly influenced by the instructors.

The findings suggested that physiotherapy students were positively engaged with the new method of learning even though they were anxious to finish their study. Still, this current study did not evaluate how they accepted their practical sessions or clinical practices through online mediums. Puljak et al., 2020 stated that the majority of health sciences students are concerned about the consequences of inadequate or lack of practical education for their

future job preparedness. Studies performed among medical students showed that they have a moderate level of acceptance (Ibrahim et al., 2021) even when encouraged to shift to online learning for both preclinical years and also clinical sciences to fit with the current situation (Anwar et al., 2020). However, the study was conducted at a private medical college where the students belong to a higher socioeconomic status (Anwar et al., 2020). In contrast to this statement, medical students in a study by Ibrahim et al., (2021) still recognized clinical teaching was challenging and not suitable through e-learning medium. An opposite finding by Subedi et al., (2020) showed that nursing lecturers and students did not agree with e-learning because both suffered from obstacles brought about by internet problems during class.

In general, the physiotherapy students seemed to have adjusted well to the e-learning method since the survey was distributed in the second semester of e-learning implementation. The acceptance towards e-learning among our physiotherapy students was not affected based on their geographical location or years of study. However, they still had trouble navigating and concentrating during e-learning class. They even had a high level of anxiety to complete their study which could be related to the lack of physical classes. Hence, a further study on psychological distress among physiotherapy students should be done.

CONCLUSION

The Covid-19 pandemic outbreak has interrupted the educational process worldwide. Hence, people rely heavily on online platforms and e-learning as an optimal solution to ensure the continuity of the teaching and learning process. Students' acceptance towards e-learning should be considered to allow the authorities to enhance the new pedagogy. It was found that although rural areas in Malaysia have lower internet connectivity, the students still accept to opt for the current situation despite being anxious about finishing their studies through e-learning. This indicates that policymakers and authorities can eliminate the uncertainty regarding e- learning in students in urban areas and should focus on the students' perspective as a whole. Nevertheless, improvement in terms of teaching skills should be done to optimize the e-learning process.

Instructors or lecturers are urged to use their creativity in delivering lectures

by using new and modern technology during this pandemic. Hence, to use e-learning in the 'new normal' to achieve learning outcomes established by institutions, instructors must have basic IT background knowledge. The study recommends that instructors involved in emergency online education should create channels for student-instructor and student-student interaction. Therefore, this interaction will reduce students' feelings of isolation while also boosting their engagement and confidence in online learning.

This study has its limitations as well as it concentrated on the UiTM physiotherapy students only. Future studies should include other education institutions to diversify the result. A study in the educators' take should also be considered in order to have their perspective on e-learning. Besides, this study is limited to online quantitative surveys using a close-ended questionnaire. Therefore, in future investigations, it is recommended that interviews or open-ended questionnaires be used to find further explanations to the other perspectives of this study, as suggested.

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