The Use Of E-Learning Platforms During The Covid-19 Movement Control Order: Malaysian University Students' Perceptions, Satisfactions, And Challenges

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Abstract. The sudden increase in the statistical outbreak of Coronavirus in Malaysia had urged the government to impose a movement control order (MCO) starting 18 March 2020 for Malaysians to stay at home to stop the virus from spreading even more. Since the virus had been spreading rapidly across the globe, the situation demanded the closure of schools and educational institutions giving rise to emergency remote teaching in ensuring that students are not neglected during this pandemic. Due to the dramatic changes in all public and private institutions from face-to-face interaction to online learning, students have faced difficulty and challenges in adapting to the online learning methods that were made compulsory by lecturers and institutions' directives. Thus, this article investigates the students' perceptions, satisfaction, and challenges during this period of sudden change to e-learning platforms during the Covid-19 Movement Control Order. The questionnaire was piloted with the first 128 responses to analyze the validity and reliability of each item categorically. The reliability statistics on the survey for students' perceptions showed .896, for challenges faced by the students showed .906, and for the students' satisfaction showed .910. This article presents further findings gathered from a total of 329 participants that involved 79% from public universities and 21% from private universities across Malaysia. The significant correlations between the students' perceptions, challenges faced, and satisfaction with their universities' e-learning platforms were analyzed. Lastly, discussions and three implications demonstrate how participants' perception, challenges, and satisfaction significantly motivate their cognitive engagement and academic performance.

Keywords: E-learning platforms, Covid-19 pandemic, Malaysian university students' perceptions, Satisfaction, Challenges

1 Introduction

1.1 Background

Coronavirus, better known as Covid-19, was first discovered in December 2019 in Wuhan, China. Since then, the virus has been spreading rapidly throughout the world. The first case detected in Malaysia could be traced back to three Chinese nationals who entered Malaysia via Singapore airlines and had close contact with an infected person on 24th January 2020. According to the World Health Organisation (WHO), the Covid-19 virus spreads mainly through a close range of human interactions; from an infected person's mouth or nose in small particles when coughing, sneezing, speaking, singing or even breathing under the same air. Thus, the sudden increase in the statistical outbreak with the number of positive cases which had reached beyond 553 cases of Coronavirus in Malaysia on 16th March 2020. Tan Sri Muhyiddin Yassin, the prime minister then, announced a Movement Control Order (MCO) for Malaysians to stay at home to prevent the virus from spreading further for 14 days (18th March till 31st March 2020).

Though the virus had been in control for a period during the first lockdown, Malaysia was hit with the second wave of a Covid-19 virus outbreak on 28th May 2021, with the number of positive cases reaching 8000 cases daily. And so, the Prime Minister therefore enforced a second lockdown from 29th May 2021 until 28th June 2021. Since the lockdown had greatly affected the nationals' economy, Malaysians urged the government to lift the MCO. However, the Prime Minister was still worried about the daily number of cases. So, he enforced another lockdown called the Enhanced Movement Control Order (EMCO)

effective 3rd to 31st July 2021. On 16th July 2021, the Prime Minister announced that the EMCO would change to the National Recovery Plan (NRP) with the newly established Standard Operate Procedure (SOP) in Malaysia, followed by a phase-by-phase reopening of businesses effective 3rd August 2021. Though Perlis and Sarawak entered phase 2 of NRP, the rest of the states were still in phase 1 of NRP.

Consequently, starting from the initiation of national lockdown, the situation demanded the closure of businesses, activities and even schools and educational institutions to indicate emergency remote teaching in ensuring that students were not left idle during this pandemic. According to Fry (2001), "online learning is the use of the internet and some other important technologies to develop materials for educational purposes, instructional delivery and management of the program." This prompted educators with no choice but to turn to e-learning platforms to support and enhance students' learning and teaching activities for the time being. Moreover, Azar & Haslinda (2020, p.61) emphasized that "it was not an easy task for most teachers in Malaysia to bear the responsibility of making sure the learning process went smoothly and efficiently."

Nevertheless, due to the dramatic changes in public and private institutions of face-to-face interaction to online learning during the Covid-19 pandemic, students faced difficulty and challenges adapting to the online learning methods that were made compulsory by the lecturer and institutions directives. Technology access, internet connections and online learning readiness relates to interests and motivations, and satisfaction toward e-learning platforms. Nguyen (2015) asserts that "online learning is considered to enhance and improve student learning outcomes while

combating the reduction in resources, particularly in higher education."

1.2 Objectives of the study

1. To identify Malaysian university students' perceptions towards the use of e-learning platforms during the covid-19 Movement Control Order (MCO).
2. To highlight the main challenges that these students faced with the use of e-learning platforms during the Covid-19 MCO.
3. To investigate the impact of students' perceptions and challenges on their satisfaction level in the use of e-learning platforms during the Covid-19 MCO.

1.3 Research questions

1. What are Malaysian university students' perceptions towards the use of e-learning platforms during the Covid-19 MCO?
2. What are the main challenges the students faced with e-learning platforms usage during the Covid-19 MCO?
3. What is the influence of Malaysian university students' perceptions and challenges on their satisfaction level in the use of e-learning platforms during the Covid-19 MCO?

2 Literature review

2.1 Perception

Entering this technological era, educators worldwide have begun to adopt various e-learning platforms as a viable alternative in aiding the teachers to provide more information on the subject matter and create opportunities for students to learn creatively in synchronous, asynchronous learning. Studies have also reported the positive impact of e-learning on students' academic achievements. For instance, "e-learning can be considered as an alternative to learning compared to the traditional learning with lecturers, where learning can take place outside the classroom, establish independent learning, help make learning as lifelong learning, and encourage students to interact with one another." (Ana et al., 2020)

Latip et al., (2020) investigated Malaysian university students' acceptance of e-learning based on the unified theory of UTAUT and TAM model. According to the researchers, out of the total responses collected through convenience sampling methodology, only 414 answers were deemed valid and used for further data analysis. Findings showed a significant relationship between students' acceptance of e-learning with performance expectancy, perceived enjoyment, and social influence. It was theorized that the usefulness of e-learning platforms helps improve the students' motivation and increases their interest in utilizing it fully. As asserted by Al-Rahmi et al., (2017), "self-efficacy and content of e-learning are two important factors related to e-learning, and the intention to use this technology depends on perceived usefulness and satisfaction of the students" (p. 14273). Therefore, Latip et al., (2020) suggested that students' acceptance of e-learning was mainly influenced "by their perception that this system can improve their performance in study, support from people around them, and their feeling towards this system." (p.670)

Another study conducted by Mad, Omar, Sarudin and Aziz (2020) explored Higher education students' perspectives and willingness to use e-learning. A total of 212 students participated in this study with enough experience to operate a computer. Results showed that students regarded e-learning as a substitute method in improving their academic education.

Furthermore, they also agreed that it helps to increase the possibility of interactions with their friends to discuss learning content. And instead of having to attend in a classroom physically, the students felt that institutions should conduct tests and assignments electronically to enable them to learn at their own pace. The findings further revealed that the majority of them perceived e-learning as beneficial, enjoyable, and easy to use. "Level of e-learning acceptance among students was modest and influenced by factors such as usability and ease of use" (Taat and Francis, 2020). Thus, the authors stated that although Malaysia still lacked in technologies advancement compared to other countries such as Japan and Korea, students still showed positive acceptance and attitudes toward the application of e-learning for their learning. It was vital for them to be prepared for the future job market demands. And students mostly agreed that e-learning could improve their learning experience and encourage engagement among students and their lecturers. "Positive attitude goes a long way to influence intention to use and actual usage." (Egbe, 2014)

2.2 Challenges

Despite the growth of ICT that has made it possible to obtain information and made learning occur quickly and easily for learners, there will be issues and challenges related to the implementation of online learning in education. According to Qureshi et al, (2012), "technologies bring challenges as well and merely the presence of technology does not guarantee for a successful implementation. It is essential to cater to the students' concerns to improve the educational perspectives of e-learning." (p. 313)

A recent study conducted by Abdelsalam M. Maatuk et al., (2021) explored the challenges of implementing e-learning during this Covid-19 pandemic through a public university's instructors and students' perspectives. A total of 135 responses were collected from the students and 20 responses from the lecturers. From the student's perspectives, findings revealed that e-learning was deemed a burden for the students, which was also agreed by the instructors and made them feel isolated with the absence of social and physical interactions. Moreover, poor internet connection and lack of e-learning experience was also another issue expressed by the students. These results can be supported by Briliannur et al. (2020, p.28), "there is less effective online learning due to the lack of facilities and infrastructure and unpreparedness of technology education." According to Al Aqad et al. (2021) teachers encounter considerable challenges when engaging in computer-assisted language learning, it is critical to the country's educational transformation. Creating instructional materials requires more time and work, but it gives more possibilities for greater practice with the language.

Comparably, from the instructors' perspectives, their main issue with e-learning was that though it was considered beneficial for both sides, teaching through technologies requires excessive financial capability compared to the traditional way of teaching. Furthermore, Zhang et al., (2020) also stated that "lack of teacher experience, less effective online education processes, and long-term online teaching could negatively impact students' mental and physical health." Thus, the researchers proposed that institutions should provide and ensure internet stability for the students and instructors with the necessary computer devices to implement e-learning. In addition,

instructors should also attend seminars and training regularly to gain enough experience to ensure the success of e-learning applications for the students.

One other study carried out by Almaiah, Al-Khasawneh and Althunibat (2020) investigated the main challenges students face with the current e-learning systems and the factors that support the utilisation of e-learning during the Covid-19 pandemic. This study applied the qualitative method with a semi-structured interview to understand the adoption of e-learning systems from multiple sources. According to the researchers, 61 participants from 5 different universities were interviewed. The results of this study were in line with previous research by Abdelsalam M. Maatuk et al., (2021) which showed changes in management, e-learning systems technicality and financial support were the reasoned as the main challenges. Meanwhile, technologies, e-learning system quality, culture, self-efficacy, and privacy were the factors affecting the usage of e-learning during the Covid-19 pandemic. These findings can be supported by Rhema and Miliszewska (2010) "cultural and linguistic background, awareness and attitudes towards E-learning, underdeveloped technological infrastructure, cost of educational technologies, lack of local proficiency in E-learning, and lack of educational management to support the system's initiatives were some of the challenges that associated with the implications of e-learning" (Ja'ashan, M.M.N. H., 2020, p.126). Therefore, it was suggested that university administration supply the necessary technological resources to adopt e-learning effectively and ensure the flexibility of transitioning from traditional learning to e-learning. Furthermore, inventors should also develop a more user-friendly system to increase the intention of usage among students and instructors.

2.3 Satisfaction

Additionally, e-learning has become part of modern education to benefit students' academics throughout the Covid-19 pandemic across the globe. As asserted by Puška et al., (2021), "the uniqueness of using the Internet as a learning medium has created the notion of e-learning due to its flexibility and adaptability to cater to students' learning needs" (p.174). Nonetheless, according to Cohen and Baruth (2017), "online learning involves a large number of students to participate independently per their learning goals, previous knowledge and skills." And studies have shown that students' satisfaction holds a significant impact on the success of the e-learning process that could improve the quality of the e-learning system.

Hence, Maheswaran et al., (2020) studied students and lecturers' satisfaction with the application of e-learning platforms during the MCO period in one of the private universities in Malaysia. This study combined both quantitative and qualitative methodology, with five lecturers being interviewed and 151 responses from the students through a survey. And Microsoft Teams was implemented by the university as their e-learning platform. Based on the interview, system quality, such as device performance and internet connections, were found to be notable setbacks for subject delivery. And this affected user satisfaction through the aspect of information quality. Moreover, with the sudden transition from traditional teaching to online teaching during MCO, the lecturers suffer greatly in adopting e-learning platforms without technological experience. Therefore, they strongly suggest institutions to

provide adequate training related to e-learning systems regularly.

On the other hand, the students were quite satisfied with the e-learning system quality as well as the information and service quality delivered by their lecturers. However, "lacking internet connectivity, no face-to-face interaction and some classes are not suitable for e-learning" (p.152) were the main issues that affect user satisfaction towards the use of e-learning. As reported by Theo and Wong (2013), "student satisfaction plays an important role in the evaluation of instructors, their courses, and the overall quality of educational programs." Consequently, it was suggested that the lecturers should prepare a pre-recorded video lecture for the students before the class and have a live follow-up Q&A session for clarifications. This method could be an alternative for the teachers to resolve some of the challenges faced by the students. In addition, teachers should also explore and familiarise themselves with e-learning resources to create an interactive learning environment for the students during this MCO period.
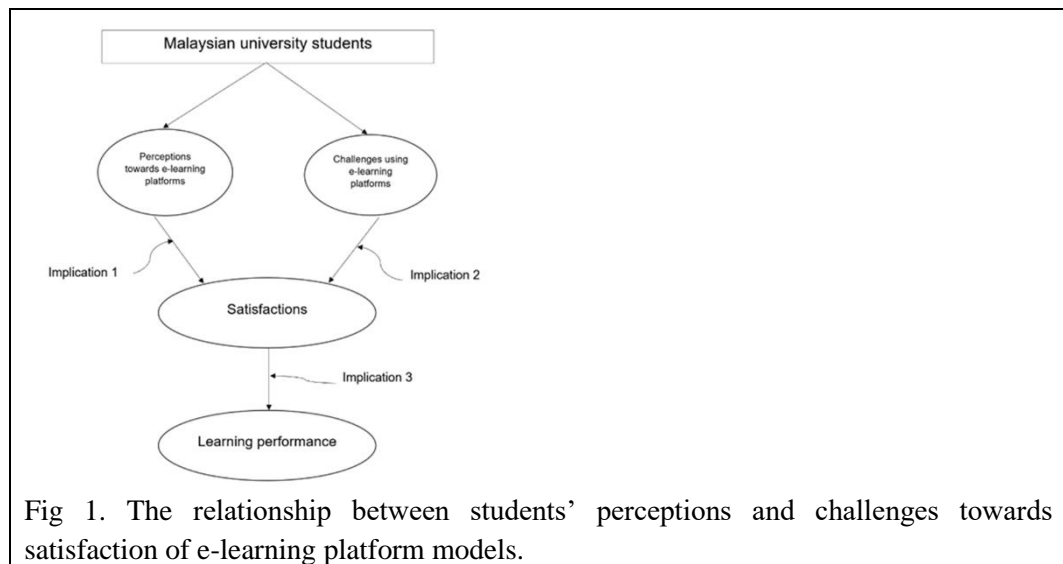
2.4 Conceptual Framework

Fig 1. The relationship between students' perceptions and challenges towards satisfaction of e-learning platform models.

Based on the objectives of this study, followed by a preliminary analysis of varied literature reviews related to the topic, the proposed framework (Figure 1) is constructed with the determination of exploring and identifying the relationship between the students' perceptions and challenges faced with their satisfaction towards the implementation of e-learning platforms that associates within their learning performances during the MCO of the Covid-19 pandemic. Apart from that, in order to provide an outline for this study, two definite areas have been identified as having a direct influence on students' satisfaction towards e-learning platforms, and their satisfaction is interrelated with their learning performances.

In relation to determining students' perceptions towards e-learning platforms, Požgaj and Kneževi (2007) stated that "students have begun to recognize e-learning as an acceptable form of education, especially as a supplement to traditional teaching" (p.384). From the literature, Latip et al., (2020) argued that "only performance expectancy and perceived enjoyment were found to be significant with students' self-efficacy." Furthermore, Mad, Omar, Sarudin and Aziz (2020) affirm that though students may not discard the e-learning application, they

would prefer hybrid learning for a more comfortable education experience.

Besides that, with the sudden transition from traditional learning to e-learning, other than educators, students also encountered various difficulties in adapting to the education systems provided by their institutions. For example, findings from the article by Qureshi et al, (2012), "e-learning reduces the workload on faculty but increases the pressure on students." Similarly, Almaiah, Al-Khasawneh and Althunibat (2020) indicated that technical issues such as performance, usability, and website service quality were among the main challenges with adopting the current e-learning system by many students.

Regardless, to ensure the continuity of education during the MCO, it is crucial to examine the factors influencing e-learning satisfaction among students. As supported by Puška et al., (2021), "factors such as system, information and service quality are the reasons that affect user satisfaction of e-learning." Hence, this study will provide a holistic approach that connects the components as shown in figure 1 and how they correlate with one another to understand the students' perceptions, challenges, and satisfaction through the use of e-learning platforms in enhancing their learning performance during the MCO of Covid-19 period.

Altogether, on the basis of this framework, several implications are formulated under each component to provide further elaborations for educators to consider when developing an effective online learning environment for the students. As asserted by Hermida (2020), "the crisis is not over, and we need to adapt to the students' responses and needs if we want them to continue and have a positive higher education experience."

3 Methods

This study was conducted with a quantitative method. The questionnaire was developed based on various studies and research but was adjusted to meet Malaysian students' environment.

The questionnaire was piloted with the first 128 responses to calculate the reliability statistics for each item, as shown in Table 1 below.

Table 1. Reliability statistics

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
A) Students' perceptions	.896	.905	20
B) Challenges faced by students	.906	.900	20
C) Students' satisfactions	.910	.922	5

3.1 Sampling methods

This study implements one of the quantitative research techniques called the probability sampling method to gather accurate samples for the whole population. A total of 329 responses were collected from various universities across Malaysia.

Table 2. Demographic profile

Items	Category	Frequency	Percentage
1. Gender	Male	63	19%
	Female	266	80%
2. Age	18-24	268	81%
	25-34	46	14%
	35-44	11	3%
	45-56	4	19%
3. Nationality	Malaysian	329	100%
4. Level of education	Foundation	10	3%
	Diploma	38	11%
	Degree	236	71%
	Master	33	10%
	PhD	12	3%
5. Semester	1	68	20%
	2	69	21%
	3	29	8%
	4	67	20%
	5	31	9%
	6	31	9%
	7	17	5%
	8	9	2%
	9	2	0.6%
	10	1	0.3%
	12	1	0.3%
	Final semester	4	1%
6. University type	Public University	262	79%
	Private University	67	20%
7. Please name your university	IIUM	60	18%
	MSU	65	19%
	UIAM	2	0.6%
	UITM	76	23%
	UKM	11	3%
	UM	54	16%
	UMK	1	0.3%
	UMP	1	0.3%
	UNIKL	1	0.3%
	UPM	10	3%
	UPSI	17	5%
	USM	19	5%
	UTP	1	0.3%

	UUM	11	3%

The data consists of 63 males and 266 females, mainly 18 years old to 24 years old with a majority studied bachelor's degree. 79% collected from the public universities, and 20% collected from the private universities.

3.2 Data collection procedure

The questionnaire was collected via Google form. In support of this, Burgess (2001) stated that "questionnaires could be delivered to respondents by numerous means, which includes post, e-mail attachments, or via publishing on a website for interactive completion."

The web-based questionnaire was shared as a link for the participants to access and complete the survey. The number of responses was observed through the google form. Once the targeted number of responses has been achieved, the data will be analysed to answer the research questions.

The questionnaire was made up of 58 items in all. The first section was made up of 13 items that measured the participants' demographic information. Excluding the demographic profile, the remainder measured the students' perceptions of e-learning platforms used in their university during the MCO Covid-19, the challenges students face using e-learning platforms and the students' satisfaction towards the e-learning platforms. For perception and challenges, the items were measured with a common five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree, and for satisfaction, the items were measured with five-point Likert scale ranging (1) very poor, (2) poor, (3) acceptable, (4) good, and (5) very good.

3.3 Data analysis procedure

As the data set was reliable since the value was above 0.6 for each category during the pilot stage, it was deemed reliable for further data collection and analysis. Therefore, the 329 responses would first be calculated using the Pearson correlation coefficient to investigate the relationship between the students' perception and challenges with their satisfaction towards e-learning platforms. Subsequently, descriptive statistics of frequency and percentage for each item were calculated and presented in each category, including the demographic profile.

Table 3. Types of online learning platforms

8. Which e-learning platforms does your university adopt for online learning? (You can choose more than one answer.)	Microsoft Team	191/329
	Zoom	217/329
	Google Meet	177/329
	Google Classroom	22/329
	WebEx	51/329
	Kahoot	1/329
	Quizizz	1/329
	Padlet	2/329
	Spectrum	2/329
	E-learn	11/329

Items 8 presents the simplified version of the data calculated based on the frequency for the number of students who utilised the said e-learning tools per

overall respondents. This method was due to the responses collected being jumbled up with various answers.

As shown in Table 4, most students were using their Laptops and Smartphones with either mobile data or home internet for a more stable internet connection surfing the online learning platforms regularly.

Table 4. Types of gadgets, internet connection and quality, and frequency of online learning platforms

9. What gadgets do you have? (You can choose more than one answer)	Desktop Computer	1	0.3%
	Laptop	20	6%
	Laptop, Desktop Computer	1	0.3%
	Laptop, Smartphones (iPhone, android....etc)	225	68%
	Laptop, Smartphones (iPhone, android....etc), Desktop Computer	15	4%
	Laptop, Smartphones (iPhone, android....etc), Desktop Computer, Tablet (iPad, Samsung Galaxy....etc)	5	1%
	Laptop, Smartphones (iPhone, android....etc), Tablet (iPad, Samsung Galaxy....etc)	55	16%
	Laptop, Tablet (iPad, Samsung Galaxy....etc)	1	0.3%
	Smartphones (iPhone, android....etc)	3	0.9%
	Smartphones (iPhone, android....etc), Desktop Computer	2	0.6%
	Smartphones (iPhone, android....etc), Tablet (iPad, Samsung Galaxy....etc)	1	0.3%
10. What type of internet connection do you use for online learning? (You can choose more than one answer)	Home internet	99	30%
	Mobile data	16	4%
	Mobile data, Broadband	3	0.9%
	Mobile data, Home internet	84	25%
	Mobile data, Home internet, Public Wi-fi	6	1%
	Mobile data, Mobile hotspot	48	14%
	Mobile data, Mobile hotspot, Home internet	33	10%
	Mobile data, Mobile hotspot, Home internet, Public Wi-fi	5	1%
	Mobile data, Mobile hotspot, modem	1	0.3%
	Mobile data, Mobile hotspot, Public Wi-fi	3	0.9%
	Mobile data, Mobile hotspot, University Wi-fi	1	0.3%

	Mobile data, Public Wi-fi	3	0.9%
	Mobile hotspot	7	2%
	Mobile hotspot, Home internet	17	5%
	Mobile hotspot, Public Wi-fi	2	0.6%
	Public Wi-fi	1	0.3%
11. What is the quality of your internet connection when using e-learning platforms?	Stable	200	60%
	Unstable	120	36%
	Poor	9	2
12. On average, how frequently do you use e-learning platforms?	Always	251	76%
	Sometimes	30	9%
	Often	43	13%
	Seldom	5	1%

4 Results

As a pilot study has been conducted to improve the instruments' reliability, collected data was further analysed based on Pearson correlation coefficient using the same statistical analysis programme of SPSS to calculate the strength of the linear relationship between students' perceptions with satisfaction, and challenges faced with students' satisfaction towards e-learning platforms.

Table 5. Pearson correlation for students' perceptions with satisfactions

		Perception	Satisfaction
Perception	Pearson Correlation	1	.771**
	Sig. (2-tailed)		.000
	N	329	329
Satisfaction	Pearson Correlation	.771**	1
	Sig. (2-tailed)	.000	
	N	329	329

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

In calculating the relationship between the students' perceptions with their satisfaction towards the use of e-learning platforms, the calculated data showed that the correlation was highly positive and statistically significant (r = .771, p < .001). Hence, this indicates the existence of a significant relationship between the two variables. This suggests that the students' perceptions do impact their satisfaction on using the e-learning platforms provided by their universities during the Covid-19 MCO.

Table 6. Pearson correlation for challenges students faced with satisfactions

		Challenges	Satisfaction
Challenges	Pearson Correlation	1	-.655**
	Sig. (2-tailed)		.000
	N	329	329
Satisfaction	Pearson Correlation	-.655**	1
	Sig. (2-tailed)	.000	
	N	329	329

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

However, when calculating the relationship between the challenges students faced with their satisfaction on e-learning platforms, the calculated data demonstrated that the correlation was moderately negative and statistically insignificant (r = -.655, p < .001). Therefore, there was no significant relationship between these two variables, and this would imply that the challenges these students encountered did not influence their satisfaction level towards using the e-learning platforms during the Covid-19 MCO.

Further, this study presents data gathered from the respondents to investigate the students' perceptions and challenges they faced with their satisfaction on the e-learning platforms used in their university during the MCO Covid-19 in the form of frequency and percentage. The data will be presented in 4 sections according to its category.

4.1 Students' perceptions

As presented in Table 7, 41% agreed with item number 1. However, 29% were neutral about the enjoyment of e-learning platforms for their academic studies. The same results showed in items 3 with 29% and items 4 for 28% of the respondents opted for "neutral".

Though 36% satisfied with current e-learning platforms' interface for item number 5, 31% felt that e-learning neither improved nor decreased their learning skills for item number 6. Similar data also showed for items 7 with 30% felt neutral with the quality of learning through their universities'' online platforms.

28% disagreed with items 8 for improving interactions. They much rather learn through physical books than e-learning platforms, as presented in item 9 with 35% of the respondents who opted for "strongly agree". In addition, 31% of them also opted for the same option of "strongly agree" for item 10.

Nonetheless, 36% agreed with items 11 and 45% strongly agreed for items 12. But 37% either agree or disagree as they felt neutral with items 13, 25% for items 14, 29% for items 15, 31% for items 16, and 34% for items 17.

For the remaining three items, 36% agreed with item number 18 and 34% with item 19, while 41% strongly agreed with item number 20.

Table 7. Students' perceptions towards e-learning platforms which are being used in their university during the MCO Covid-19.

Items	SD	D	N	A	SA
1. I feel confident about using e-learning platforms.	0.9% (3)	8% (27)	29% (98)	41% (137)	19% (64)
2. I enjoy using the e-learning platforms for my studies.	5% (19)	19% (63)	29% (98)	26% (88)	18% (81)
3. I feel motivated when learning through the e-learning platforms.	15% (51)	24% (82)	29% (96)	21% (69)	9% (31)
4. E-learning platforms can be considered as one of the best methods to increase student's satisfaction.	11% (38)	26% (86)	28% (95)	22% (74)	10% (36)

5. I am satisfied with the e-learning platforms' interface.	4% (13)	18% (60)	29% (97)	36% (121)	11% (38)
6. Using the e-learning platforms has improved my learning skills.	12% (41)	18% (62)	31% (105)	24% (80)	12% (41)
7. E-Learning through the online platforms used by our university increases the quality of learning.	9% (31)	23% (76)	30% (100)	27% (89)	10% (33)
8. Using the online platforms for e-learning has increased my interaction with other students.	28% (94)	22% (74)	26% (86)	13% (45)	9% (30)
9. If I had a choice, I would prefer to learn from a book than through e-learning platforms.	6% (22)	10% (34)	24% (81)	22% (75)	35% (117)
10. Learning through online platforms is frustrating.	4% (13)	13% (43)	20% (68)	25% (83)	31% (122)
11. Learning to operate the online platforms for e-learning is easy for me.	2% (8)	11% (39)	26% (86)	36% (120)	23% (76)
12. The use of e-learning platforms saves me money, such as printing study materials.	3% (12)	5% (19)	21% (69)	24% (80)	45% (149)
13. I would be interested in studying courses that use e-learning platforms.	9% (90)	17% (56)	37% (123)	20% (67)	16% (53)
14. E-learning helps me to use time effectively.	14% (48)	21% (71)	25% (84)	21% (70)	17% (56)
15. I prefer e-learning platforms because I can work according to my own pace.	9% (31)	13% (44)	29% (97)	21% (72)	25% (85)
16. The e-learning platforms provides better learning opportunities than the traditional means of learning.	13% (43)	21% (70)	31% (104)	20% (67)	13% (45)
17. E-learning facilitates plagiarism in assignments and projects.	4% (15)	8% (28)	34% (114)	30% (100)	21% (72)
18. E-learning platforms give me the opportunity to acquire new knowledge.	1% (6)	7% (23)	24% (82)	36% (120)	29% (98)
19. I benefit from the feedback given by my lecturers through e-learning.	1% (6)	11% (37)	30% (101)	34% (112)	22% (73)
20. Convenience is part of an essential feature for e-learning during MCO.	1% (6)	4% (16)	20% (67)	31% (102)	41% (138)

4.2 Challenges

It was surprisingly found that most of the respondents felt neutral about several items, as presented in Table 8. Furthermore, it showed that the majority had neither a positive nor a negative response to the challenges, as stated in

items number 1, 6, 7, 8, 10, 11, 14, 15, 17, 18, 19 and 20.

Comparably, the majority of the respondents strongly agreed with items 2,

9, 12, 13, and 16. while 28% (n=86) agreed with items 5.

However, 41% strongly disagreed with items 3 and 58% with items 4.

Table 8. Challenges faced by students with the use of e-learning platforms.

Items	SD	D	N	A	SA
1. I have technical difficulties.	8% (29)	18% (60)	30% (99)	28% (92)	14% (49)
2. I need face to face Interaction.	3% (11)	5% (17)	21% (71)	23% (77)	46% (153)
3. I do not have enough computer, laptop, and any other technology related literacy.	41% (135)	30% (100)	14% (48)	8% (27)	5% (19)
4. I do not have a computer, laptop nor a Wi-Fi connection, therefore I am not able to participate in e-learning.	58% (191)	23% (76)	9% (32)	4% (15)	4% (15)
5. I am concerned about privacy and security.	6% (21)	14% (46)	26% (86)	28% (93)	25% (83)
6. I have struggled to adapt to using the e-learning platforms.	13% (45)	24% (79)	27% (89)	18% (62)	16% (54)
7. The e-learning platforms have not been useful for improving my learning skills.	16% (53)	21% (71)	30% (99)	17% (58)	14% (48)
8. I dislike the idea of using e-learning platforms.	15% (51)	19% (63)	34% (113)	17% (56)	14% (46)
9. The e-learning platforms are a kind of barrier against improving my communication skills with other students and teachers.	6% (21)	14% (46)	23% (78)	25% (84)	30% (100)
10. I feel no compulsion for online learning.	7% (25)	16% (55)	41% (136)	17% (56)	17% (57)
11. I can freely express myself through the e-learning platforms.	14% (48)	19% (64)	35% (117)	20% (68)	9% (32)
12. I get bored quickly when learning through the online platforms.	5% (17)	14% (47)	23% (78)	21% (69)	35% (118)
13. The use of the e-learning platforms provides fewer opportunities to participate in learning activities.	4% (13)	14% (47)	27% (90)	25% (84)	28% (95)
14. The flexibility in communication channels diverts my focus.	3% (11)	10% (35)	37% (123)	26% (88)	21% (72)
15. The instructions provided by the lecturers are difficult to follow.	10%	24%	37%	14%	12%

	(35)	(80)	(124)	(48)	(40)
16. I feel socially isolated with the use of online platforms.	7% (25)	12% (41)	25% (85)	24% (80)	29% (98)
17. E-learning modes make learning difficult.	10% (36)	14% (49)	31% (105)	17% (56)	25% (83)
18. I do not want to be involved in e-learning.	21% (69)	21% (71)	29% (96)	11% (39)	16% (54)
19. I cannot get proper feedback from my lecturers on online platforms.	10% (36)	17% (56)	30% (100)	21% (72)	19% (65)
20. I do not like the lecturers' online content because it is boring.	17% (56)	21% (72)	33% (109)	18% (60)	9% (32)

4.3 Satisfaction

In this category, majority of the respondents opted "acceptable" for their overall satisfaction, suitability, and self-motivation towards the use of e-learning platforms with 39% for items 1, 34% for items 3, and 29% for items 4 while 36% of the respondents regarded e-learning platforms as useful in items 2 and 31% of them viewed it as a method of study during MCO, as shown in items 5.

Table 9. Students' satisfaction towards the e-learning platforms

Items	Very Poor	Poor	Acceptable	Good	Very Good
1. The overall satisfaction with e-learning platforms.	5% (17)	12% (41)	39% (131)	31% (105)	10% (35)
2. The overall usefulness of the e-learning platforms.	3% (12)	9% (31)	33% (109)	36% (119)	17% (58)
3. The overall of e-learning platforms' suitability that allow me to meet my learning needs.	4% (14)	19% (64)	34% (113)	32% (106)	9% (32)
4. Your self-motivation while interacting through the e-learning platforms.	20% (66)	24% (80)	29% (98)	15% (51)	10% (34)
5. E-learning platforms as a method of study for students during MCO.	4% (16)	5% (18)	30% (101)	31% (103)	27% (91)

5 Discussions with implications

The article presents a study collected from a total of 329 responses to examine the students' perceptions, challenges and satisfaction towards e-learning platforms used in their university during the MCO Covid-19. The results could offer recommendation for tertiary institutions

and education to understand students' perceptions and challenges encountered regarding online learning and user satisfaction with e-learning platforms that associate with their learning performances.

RQ 1: What are Malaysian university students' perceptions towards the use of e-learning platforms during the Covid-19 MCO?

During the MCO period, e-learning platforms have become the primary preference for educators to allow students to acquire and develop knowledge due to the system's flexibility and adaptability to meet their learning needs. According to Poerwita and Herlambang (2019), "students' satisfaction in the e-learning context can be defined as the individual's feelings and attitudes toward the educational process" (p.42). The data revealed that most students felt confident with the e-learning platforms utilized by their institutions as they were satisfied with the website interface that was arranged by their universities during the MCO of Covid-19.

However, many of them still felt that learning through books would be more beneficial than e-learning as some interfaces may distract and obstruct their learning process. Essentially, the students determined that learning through online platforms was frustrating, which could be interpreted as having a hard time adapting to the platforms' constant evolution and updates on software and interfaces. As asserted by Latip et al. (2020), "People who have high self-efficacy in technology will have a higher tendency to learn with technology and consider it useful for them. Compared to those with low self-efficacy would perceive technology as a burden and this could negatively affect their acceptance of e-learning" (p. 660).

In spite of this, findings indicated that students decided to take the initiative to learn to operate the e-learning platforms as they valued the convenience of not having to print reading materials. Apart from saving money on printing, it can be concurred that e-learning also benefits the students in improving their abilities in digital learning. According to Goldhammer, Naumann and Kebel (2013), "basic computer skills and the ability to access and collect information in a digital environment relates positively with the ability to read electronic text."

In addition to this, the students also found that e-learning provides better learning opportunities to acquire new knowledge than the traditional means of learning. Furthermore, they believed that it was more beneficial for them to receive feedback through e-learning as they can save it for their future references compared to a classroom learning environment. According to Maria (2013), "personalized feedback has a relevant impact on the students, who values it because it makes his/her learning easier, it motivates him/her not to give up and encourages communication with the teacher."

RQ 2: What are the main challenges the students faced with the e-learning platforms usage during Covid-19 Movement Control Order?

Since the Coronavirus outbreak emerged, the changing conditions from face-to-face to online learning have affected educators and the students in various aspects of the teaching and learning process. With the adaptation of online learning, educators must implement and design appropriate teaching approaches to meet current learning environment needs. In addition, educators need to consider that the successful usage of e-learning platforms reflects on understanding the main

challenges students encountered with distance learning during this MCO of Covid-19.

Privacy

In the advances of software development with educational websites and applications, students are rather concerned with the platform's privacy and security issues associated with e-learning. Hodgins, H.W (2000) stated that "most e-learning innovations have focused on course development and delivery, with little or no consideration to privacy and security as required elements." Though e-learning was supposed to provide corporate learning objectives based on the students' preferences and needs, security technologies should also protect confidentiality and privacy for students' personal information. For example, some e-learning platforms require students to sign up for an account before exploring the interface. In addition, students are anxious about providing information about themselves in online activities. "Privacy is the right to be let alone" (Warren & Brandeis, 1890).

Social interaction

Social interactions are the most common issue among students in the learning process and are considered one of the main challenges of e-learning during the MCO of Covid-19. Recent studies have shown that e-learning offers fewer opportunities for interactions between teachers and students. Despite the effectiveness of online learning compared to the traditional learning method, students were still faced with communication issues. Abdelsalam M. Maatuk et al., (2021) mentioned that "the main drawback of using e-learning is the absence of crucial personal interactions, not only between students and teachers but also among fellow students."

Therefore, many of the students preferred face-to-face interaction more than e-learning platforms. According to Gousetti et al., (2011) and Hirumi (2002), "interactions in online learning are not effective and do not nurture social interaction among learners to help them learn better." Generally, in an educational setting of MCO, the communication process is between teachers and students in online learning, in which face-to-face communication is difficult to occur. The lack of interaction between them would decrease the success of online learning and the student's productivity through e-learning.

Enthusiasm and participation in online learning activities

Almaiah, Al-Khasawneh and Althunibat (2020) claimed that "self-efficacy is one of the core elements in determining the adoption of an e-learning system in educational institutions." The data collected showed that many of the students were quickly bored with the lesson's content and this affected their participation when learning through the e-learning platforms. Garavan et al., (2010) assert that "motivation to learn reveals that a student desires to participate in, and learn from, a training activity." Previous studies also showed that lack of time and cognitive overload were part of the reasons that influenced students' enthusiasm and withdrawal from online activities in e-learning platforms. The difficulty of course learning also increases the students' anxiety that subconsciously affects their impulse to learn in online settings.

RQ 3: What is the influence of Malaysian university students' perceptions and challenges on their satisfaction level towards using the e-

learning platforms during the Covid-19 MCO?

It can be presumed from the survey that the students' perceptions do influence their satisfaction level in using the e-learning platforms provided by their respective universities during the Covid-19 MCO. Findings indicated that the systems' usefulness and suitability in meeting their learning needs were the main factors that directly affected the continuous intention to use the e-learning platforms during this pandemic. As cited in Mad, Omar, Sarudin and Aziz (2020) article, "perceived usefulness and perceived ease of use can influence students' intention to embrace applications of e-learning" (Maslim, 2007, pp. 212-224; Masrom, 2007, p.12). This outcome was confirmed as the students concluded that when it comes to distance learning, convenience is deemed crucial for e-learning during the MCO of Covid-19.

Yet, findings further revealed that challenges the students encountered do not significantly differ in their satisfaction level towards using the e-learning platforms during the MCO. Seemingly, evidence showed that the students felt satisfied with the overall usefulness of e-learning platforms brought into their academic learning in the middle of this pandemic. Hence the students considered e-learning platforms as a study method during the MCO. As Mokhtar et al., (2020) points out that "using the e-learning system provided by the higher educational institutions, the students can accomplish the learning activities quickly and increase their knowledge and skills by learning various courses." (p.48)

IMPLICATION 1: E-learning platforms as instructional tools during MCO

Since the MCO, online learning has been the primary choice for teachers to ensure the students are still learning and acquiring appropriate knowledge throughout the Covid-19 pandemic. Undeniably, e-learning platforms have progressed in the past decades. Today's young learners have become more comfortable with online learning rather than the traditional chalk and blackboards as it delivers various benefits to support their studies. Fry (2001) asserts that "online learning is the use of the internet and some other important technologies to develop materials for educational purposes, instructional delivery and program management." Most students have well-received e-learning platforms as it provides better learning opportunities in acquiring new knowledge. In fact, e-learning platforms were designed to accommodate the students' learning styles and needs. And this helps to enhance the students' learning productivity in online settings.

IMPLICATION 2: Opportunities offered from the e-learning platforms.

With the variety of e-learning platforms, students have the upper hand in acquiring new knowledge on the subject matter, including online learning activities. Moreover, it contributes towards performing essential functions and using the gadgets independently. With the ease of user interface, educators can upload learning materials and enable the students to download and learn at their own pace. Similarly, as assessments are essential to track and observe the students' learning progress through online teaching, some platforms offer interactive interfaces such as discussion

forums and chat rooms. This approach enables teachers and lecturers to deliver personalized feedback for each student, thus improving online interactivity with the students so that they won't feel socially isolated when learning online. "Developers and deliverers of e-learning need more understanding of how students perceive and react to elements of e-learning along with how to most effectively apply an e-learning approach to enhance learning" (Park, 2009).

IMPLICATION 3: Student's learning performance with the use of e-learning platforms

Some students showed a lack of motivation to participate in online learning as they felt bored quickly; this is because the learning context was probably not as interactive enough to attract their interest to learn compared to learning in a classroom environment. According to the American Psychological Association (1993), Bransford, Brown, and Cocking (2000), "fostering motivation to learn is one of the key principles for effective instruction." Additionally, the main factors that contribute to effective online learning through the e-learning platforms are the students' learning performance, such as motivation and participation. The most noticeable changes in the students' behaviour primarily derive from their readiness and acceptance of e-learning. Hence, according to Abbad (2009), "successful implementation of a system and adoption by learners requires a solid understanding of user acceptance processes and ways of persuading students to engage with these technologies."

6 Conclusion

To conclude, this article presented results from a study that examines the factors that contribute to university students'

perceptions and satisfaction towards the e-learning platforms used and identified the main challenges they faced related to this usage during the MCO of Covid-19 in Malaysia. Overall, the students responded positively to perception and satisfaction with the e-learning platforms and highlighted three main challenges in answering the second research question. The study outcome offers some insights for educators that may contribute to the development of online teaching practices. The discussions and implications may also help educators to understand the issues and problems students had to deal with by using e-learning platforms. The article also highlights the significant relationship between e-learning and students' learning performance, such as motivation and participation through a digital environment.

It can be concluded that e-learning platforms are crucial in acquiring education for students as it provides flexible access to comprehend new knowledge. Furthermore, as e-learning platforms were designed to meet the students' learning styles and needs, it also helps the teachers to integrate more meaningful and enjoyable learning lessons and materials with various online learning activities. Hopefully, this study would help educators to better understand the changing conditions from physical classrooms to online learning among students in higher education institutions in order to be able to undertake relevant steps in taking the challenges faced.

Conflict of Interest Statement

None

Competing Interests Section:

Authors Contributions Section:

All the authors in this project have contributed to the complete sections of this paper.

References

1. Adewole-Odeshi, E. (2014). Attitude of Students Towards E-learning in South-West Nigerian Attitude of Students Towards E-learning in South-West Nigerian Universities: An Application of Technology Acceptance Model Universities: An Application of Technology Acceptance Model. Retrieved from https://digitalcommons.unl.edu/libphilprac

2. Algahtani, & Abdullah. (2011). Durham E-Theses Evaluating the Effectiveness of the E-learning Experience in Some Universities in Saudi Arabia from Male Students' Perceptions. Retrieved from http://etheses.dur.ac.uk

3. Ali Sorayyaei Azar, Nur Haslinda Iskandar Tan, The Application of ICT Techs (Mobile-assisted Language Learning, Gamification, and Virtual Reality) in Teaching English for Secondary School Students in Malaysia during COVID-19 Pandemic, Universal Journal of Educational Research, Vol. 8, No. 11C, pp. 55 - 63, 2020. DOI: 10.13189/ujer.2020.082307.

4. Al Aqad, M. H., Al-Saggaf, M. A., & Muthmainnah, M. (2021). The Impact of Audio-Visual Aids on Learning English among MSU Third-Year Students. ENGLISH FRANCA: Academic Journal of English Language and Education, 5(2), 201-214. DOI: 10.29240/ef.v5i2.3329

5. Althunibat, M., A., K. (2020). Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. Education and Information Technologies, 25, 5261–5280. Retrieved from https://doi.org/10.1007/s10639-020-10219-y

6. Ana, A., Minghat, A.D., Purnawarman, P., Saripudin, S., Muktiarni, M., Dwiyanti, V., & Mustakim, S.S. (2020). Students' Perceptions of the Twists and Turns of Elearning in the Midst of the Covid 19 Outbreak. Revista Romaneasca pentru Educatie Multidimensionala, 12(1Sup2), 15-26. https://doi.org/10.18662/rrem/12.1sup1/242

7. Anat Cohen, O. B. (2017). Personality, learning, and satisfaction in fully online academic courses. Computers in Human Behavior, 72, 1-12. Retrieved from 10.1016/j.chb.2017.02.030

8. Aytekin, A. (2003). Communication Barriers in Distance Education.

9. A. Patricia Aguilera-Hermida, College students' use and acceptance of emergency online learning due to COVID-19, International Journal of Educational Research Open, https://doi.org/10.1016/j.ijedro.2020.100011

10. Bransford, Brown and Cocking, How People Learn: Brain, Mind, Experience and School, (2000), Washington, D.C: National Academy Press.

11. Briliannur Dwi C, Aisyah Amelia, Uswatun Hasanah, Abdy Mahesha Putra & Hidayatur Rahman. (2020). Analisis Keefektifan Pembelajaran Online di Masa Pandemik Covid-19. MAHAGURU: Jurnal Pendidikan Guru Sekolah Dasar, 28-37.

12. Burns, M., Case, T., & Dick, G. (2001). Association for Information Systems AIS Electronic Library (AISeL) Student Attitudes Towards Distance Education: A Comparison of Views in Australia and the US. Retrieved from http://aisel.aisnet.org/acis2001/8

13. Deli, M., & Allo, G. (2020). Is the online learning good in the midst of Covid-19 Pandemic? The case of EFL learners. Retrieved from https://sinestesia.pustaka.my.id/journal/article/view/24

14. Fetty Poerwita Sary and Oktavian Herlambang, (2019), "E-learning Program Effectiveness on Students' Learning Satisfaction at Telkom University Bandung" in Social Sciences on Sustainable Development for World Challenge: The First Economics, Law, Education and Humanities International Conference, KnE Social Sciences, pages 271–280. DOI 10.18502/kss.v3i14.4314

15. Fish, W., Professor of Educational Leadership, A., Gill, P., & Associate Professor of Educational Leadership Director of, E. (2009). PERCEPTIONS OF ONLINE INSTRUCTION.

16. Francis, M. S. (2020). Factors Influencing the Students' Acceptance of E-Learning at Teacher Education Institute: An Exploratory Study in Malaysia. International Journal of Higher Education, Vol. 9, No. 1, 133-141. doi::10.5430/ijhe.v9n1p133

17. Fry, K. (2001). E-Learning Markets and Providers: Some Issues and Prospects. Education & Training, 43(4), 233. Retrieved January 28, 2022 from https://www.learntechlib.org/p/92498/.

18. Goldhammer, F.;Naumann, J. & Kebel, Y. Assessing Individual Differences in Basic Computer Skills: Psychometric Characteristics of an Interactive Performance Measure. Eur. J. Psychological Assessment., 2013, 29(4), 263–275. doi: 10.1027/1015- 5759/a000153

19. Gousetti, A, Potter, J., and Selwyn, N. (2011). Assessing the impact and sustainability of networks stimulated and supported by the NCETM. London: London knowledge lab.

20. Hart, M., & Friesner, T. (2004). Plagiarism and Poor Academic Practice-A Threat to the Extension of e-Learning in Higher Education? Retrieved from http://www.ejel.org

21. Hirumi, A. (2002). The design and sequencing of e-learning interactions: A grounded approach. International Journal on E-Learning, 1(1), 19-27.

22. H.W. Hodgins, "Into the Future: A Vision Paper", commissioned by: American Society for Training and Development and the National

Governor's Association's Commission on Technology and Adult Learning, February 2000 at: http://www.learnativity.com/download/MP7.PDF

23. Ijaz A. Qureshi, K. I. (2012). Challenges of implementing e-learning in a Pakistani university. Knowledge Management & E-Learning: An International Journal, Vol.4, No.3., 310-324.

24. Ivanova, K., Dobreva, M., Stanchev, P., & Totkov, G. (2012). Access to digital cultural heritage : innovative applications of automated metadata generation.

25. Ja'ashan, M.M.N. H. (2020). The Challenges and Prospects of Using E-learning among EFL Students in Bisha University. Arab World English Journal, 11 (1) 124-137. DOI: https://dx.doi.org/10.24093/awej/vol11no1.11

26. Kamal, A., Shaipullah, N., Truna, L., Sabri, M., & Junaini, S. (2020). Transitioning to Online Learning during COVID-19 Pandemic: Case Study of a Pre-University Centre in Malaysia. Retrieved from www.ijacsa.thesai.org

27. Latip, M. S. A., Noh, I., Tamrin, M., & Latip, S. N. N. A. (2020). Students' Acceptance for eLearning and the Effects of Self-efficacy in Malaysia. International Journal of Academic Research in Business and Social Sciences, 10(5), 658–674.

28. Maatuk, A.M., Elberkawi, E.K., Aljawarneh, S. et al. The COVID-19 pandemic and E-learning: challenges and opportunities from the perspective of students and instructors. J Comput High Educ (2021). https://doi.org/10.1007/s12528-021-09274-2

29. Maheswaran, L., Basiruddin, R., Bobi, P., Muniadi, R., Anak Stephen Sile, E., & Leong Wei, L. (2020). User Satisfaction on E-Learning Platform during Movement Control Order Period in a Private Higher Learning Institute in Malaysia. Asian Journal Of Research In Education And Social Sciences, 2(3), 147-154. Retrieved from https://myjms.mohe.gov.my/index.php/ajress/article/view/11150

30. Muhammad Ismail Mokhtar, M. H. (2020). Students' Satisfaction towards e-Learning System: A Case Study of Politeknik Tuanku Syed Sirajuddin. International Journal of Advanced Research in Education and Society, Vol. 2, No. 4, 42-51. Retrieved from http://myjms.mohe.gov.my/index.php/ijares

31. M. Abbad, and D. N. Morris (2009). Looking Under the Bonnet: Factors affecting Student Adoption of e-learning systems in Jordan.International Journal on Review of research in open and distance learning 10(2), pp. 1-23.

32. Nguyen, T. (2015). The Effectiveness of Online Learning: Beyond No Significant Difference and Future Horizons. MERLOT Journal of Online Learning and Teaching, Vol. 11, No. 2,, 309-319.

33. N. Garavan Thomas, Carbery Ronan, O'Malley Grace and O'Donnell David, (2010), Understanding participation in e-learning in organizations: a large scale empirical study of employees, International Journal of Training and Development, Vol 14, No 3, Page(s) 155-168

34. Paris, P. (2004). E-Learning: A study on Secondary Students' Attitudes towards Online Web Assisted

Learning. Retrieved from http://iej.cjb.net

35. Park, S.Y. (2009). An Analysis of the Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use e-Learning. Journal of Educational Technology & Society, 12(3), 150-162. Retrieved from https://www.learntechlib.org/p/75428/.

36. Puška, A., Puška, E., Dragić, L., Maksimović, A., & Osmanović, N. (2021). Students' satisfaction with elearning platforms in Bosnia and Herzegovina. Technology, Knowledge and Learning, 26(1), 173–191. https://doi.org/10.1007/s10758-020-09446-6

37. Rhema, A., Miliszewska, I., & Sztendur, E. (2013). Attitudes towards e-Learning and Satisfaction with Technology among Engineering Students and Instructors in Libya.

38. S. Mad, N. A. Omar, E. S. Sarudin, and N. H. Aziz, "Perception And Intention To Use Elearning From Students' Point of View-An Evidence From Malaysia Local University," J. Comput. Res. Innov., vol. 5, no. 2, pp. 11–20, 2020.

39. Taylor, B. (2017). Effective use of Zoom technology and instructional videos to improve engagement and success of distance students in Engineering. Retrieved from https://www.zoom.us

40. Vululleh, P. (2018). Determinants of students' e-learning acceptance in developing countries: An approach based on Structural Equation Modeling (SEM).

41. WALEED AL-RAHMI, N. A. (2018). Use of E-Learning by University Students in Malaysian Higher Educational Institutions: A Case in Universiti Teknologi Malaysia. doi:10.1109/ACCESS.2018.2802325

42. Warren, Samuel D. and Louis D. Brandeis 1890, The Right to Privacy, Harvard Law Rev., Vol. IV, No. 5. http://www.lawrence.edu/fac/boardmaw/Privacy_bran d_warr2.html.

43. Wong, L., & Fong, M. (2014). Editor: Lynn Jeffrey Student Attitudes to Traditional and Online Methods of Delivery. Retrieved from http://www.jite.org/documents/Vol13/JITEv13ResearchP001-013Wong0515.pdf

44. Yaghoubi, J., Iravani, H., Attaran, M., & Gheidi, A. (2008). VIRTUAL STUDENTS' PERCEPTIONS OF E-LEARNING IN IRAN.

45. Yang, F., & Wang, S. (2014). STUDENTS' PERCEPTION TOWARD PERSONAL INFORMATION AND PRIVACY DISCLOSURE IN E-LEARNING. Retrieved from https://ix1.inter-scc.jp/ic/e?i=TBp0Ag1K8Hk

46. Yasmin, R., Whitty, M., Qureshi, I., & Ilyas, K. (2012). 310 Knowledge Management & E-Learning. Retrieved from https://www.researchgate.net/publication/279717200

47. Z. Požgaj and B. Kneževi, "E-Learning: Survey on Students' Opinions," 2007 29th International Conference on Information Technology Interfaces, 2007, pp. 381-386. Doi: 10.1109/ITI.2007.4283800

48. Zhang, S. X., Wang, Y., Rauch, A., and Wei, F. (2020). Unprecedented disruption of lives and work: Health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak. Psychiatry Res. 288:112958. doi: 10.1016/j.psychres.2020.112958