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THE PRELIMINARY STUDY: ONLINE TOOLS FOR E-LEARNING AND STUDENT SATISFACTION

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ABSTRACT

The advancement in communication technology brings an impact on many sectors, including education. In the education sector, many tertiary institutions have implemented e-learning in their teaching and learning process. E-learning is becoming a new norm in teaching and learning, especially during the pandemic. Besides, e-learning also becomes one of the marketing tools for the education institution to attract working adults to pursue their studies at a higher level. E-learning is perceived as the best alternative to help working adults getting better education levels for a job promotion. In addition, e-learning is preferred because it is convenient and flexible, easy to update subject content, increasing student skill and knowledge using technology, and the fees are cheaper than the physical class. The study conducted an online survey for 100 respondents to measure the research instrument reliability before the actual data collection. The study used a quota sampling approach to collect the response. The research instrument is considered reliable because the reliability analysis indicated more than 0.8. The pre-analysis indicated the studied online tools, namely an email, social network, and the web portal, showed moderately related student satisfaction. The study expects similar findings to be obtained for the actual data collection similar to the previous finding suggested by the scholars.

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Web Portal,
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1.0 INTRODUCTION

In The Economics Times, e-learning can be defined as a learning system that is based on formalized teaching but with the help of electronic resources which the Internet itself forms the major component of it Definition of 'E-learning' (2020). Online learning is the ability to learn through virtual platforms (Bruce, 2017). It is true that going physically or walk-in in class is easier for the students to interact actively with the educator but virtually interact with them can be said to be more flexible for the students moreover when the pandemic is hitting the current situation now.

Online learning or e-learning is an alternative method for the physical class and it sure gives a few advantages to students and also educators such as reducing traveling cost, increased convenience and flexibility, fast content update, and improving student knowledge towards technology (Anna, 2020). However, there are also a few disadvantages that will affect students and educators because of online learning. For instance, online learning requires high self-discipline, time management skills, it lessens social interaction between students and educators and it is not suitable for every topic like mathematics (Anna, 2020).

The covid-19 pandemic has become a hassle for everyone especially students around the world. Most of the schools and universities were being asked to temporarily close due to it. It has affected many of the students and educators because they were practically learning physically. Due to this pandemic, few things need to be amended hence resulting in an online learning method instead of a physical method. According to Berita Harian Online, Movement Control Order (MCO) has been forcing the learning system to be operated through e-learning instead of physical learning (Sedia hadapi kelas maya, 2020).

Electronic services that are offered by the universities must be able to fulfill the needs of the students and lecturers. Student satisfaction must be considered as a key factor in order to make sure the services are effective in the whole university's e-learning process (Azmeah, 2019). As reported in Sinar Harian Online, Profesor Datuk Dr. Raduan Che Rose said that not every institution is fully ready to fulfill the requirements for the services that need to be used for e-learning, and thus making it harder for the students to mentally and physically prepare for the online classes (Hibrahim, 2020). By conducting this research, we will know the best e-learning services for students' satisfaction in online classes. This research is focusing on the questions which are:

1. What is the relationship between e-mail and student satisfaction?
2. What is the relationship between the social network and student satisfaction?
3. What is the relationship between the web portal and student satisfaction?

Thus, the objectives of this research are as follow:

1. To determine the relationship between e-mail and student satisfaction.
2. To determine the relationship between the social network and student satisfaction.
3. To determine the relationship between the web portal and student satisfaction.

This paper is considered significantly important because it will able to provide a great contribution in knowing the relationship between online tools for e-learning and student satisfaction. The better the system will result in competent e-learning for both parties either the students or instructor. Thus, the university that aware of the recommended approach obtained from the results of this research will be able to know which tools that are the most effective in order to ease students' perspective. Therefore, a new theory between online tools for e-learning and student satisfaction may be attained. |

2.0 LITERATURE REVIEW

2.2.1 E-mail

An email has become one of the most prominent tools in handling online learning. Email which is shortened from “electronic mail” is one of the crucial features that can be used from the Internet and it allows anyone to send and receives multiple electronic mails with the help of email address (Christensson, 2014). Nowadays, universities are highly concerned with students’ satisfaction and loyalty in their services, including the learning system. It is important to have good academic-technology initiatives to reduce the time and distance barriers for working students and for those that could not attend classes on campus (Levy, 2017). Email is an important service that allows both students and educators to communicate easily. The use of email can also facilitate effective discussions among students and educators in terms of exchanging information on certain subject (Azmeah, 2019).

The online learning tools used in the study platforms must meet the requirement such as it has to be informative for it to fulfil students’ satisfaction. Based from Hamat and Amin (2010), informative tools can be defined as tools that can act as a place for digital knowledge in a various format and it can be said as a system that enables the educators and students to interact beyond the physical barrier whereby email platform is one of the tools mentioned.

Email encourages flexible communication between students and educators because email is allowing various formats to be sent such as files, videos, and audios. To make sure student satisfaction, it is important to have an accurate service while delivering the information. Thus, it ensures to meet students’ needs and provide an effective lesson for them throughout the online learning (Azmeah, 2019). The email has been proven to be accurate, fast, convenient and permanent. One of the advantages of using email is that electronic files like documents or photos can be quickly and easily sent (nibusinessinfo, 2020). Email platforms can be a key role in attaining the students’ satisfaction throughout the online learning journey. Thus, the study hypothesised that,

H1: There is a relationship between email and student satisfaction.

2.2.2 Social Network

As online learning has become more prominent in higher education, universities must understand students’ needs which could be achieved by providing high-quality service in applying to online learning (Azmeah, 2019). In this case, universities need to consider social networks as one of the online learning tools as nowadays, students are more preferred in using social networks to communicate with each other (Norman, 2019).

According to Kenton (2020), social networking can be said as the use of Internet-based social media platforms that help people to stay in-touch with each other. It also provides many purposes, including online learning. In this essence, online learning requires students and educators to actively and effectively communicate with each other which generally social network can fit into those criteria. It is pointed out that since students are anticipating in online learning classes, a positive and reassuring response by the educators may encourage shy students to be involved in the class and through a platform that they comfortable with (Levy, 2017). This may increase their satisfaction in overall online learning courses as been mentioned previously. Students are more attracted to use social network platforms to communicate such as WhatsApp, YouTube, Facebook, and Twitter application.

It is undeniable that the education field has a quick adaption in digital transformations during the last decade. It is almost certain that social media holds an important position in the digital world (Norman, 2019). Students’ satisfaction for online learning through social network use is indeed important and results in a high self-efficacy. Higher self-efficacy can facilitate students’ ability to learn, engage, perform and complete their tasks successfully through a platform where they are comfortable using in daily activities (Alqurashi, 2019).

According to Azmeah (2019), students are more receptive to incorporate Facebook into their daily online classes rather than other platforms as it can help them enhance their communication, interaction, and flexibility in finishing their

course tasks and improving their whole student satisfaction. Social network platforms help increase overall students' satisfaction in adapting to an online learning method.

H2: There is a relationship between the social network and student satisfaction.

2.2.3 Web Portal

A web portal is a web-based platform that gathers all information and data from different sources (What is a Web Portal?, n.d.). That information will be placed into a single user interface and users will be presented with information that is relevant to their context. The portal is a site that acts as a gateway to other sites on the internet where it will bring any information from various diverse sources (Sheikh & Basharat, 2017). They also added that an e-learning portal could offer users and organisations to integrate access into a wider range of learning and training resources from numerous sources. Hence, a web portal can provide various of informations which can satisfy students during the e-learning period.

A modern society needs a current higher education system. Besides, Aditia et al. (2018) also mentioned that the university is one of the centres of knowledge that should have a good implementation from the university's management. Hence, a web portal is one of the technologies and information (IT) medium that management should consider for the university to be covered. Academic portal usually will be designated and customised according to students' preference as the portal is where all kinds of academic resources and services will be placed for single access. This will result to maximize student satisfaction, either they are still in the university or an alumni.

E-learning courses can be said to reflect the adjustment of learning materials in the basis of interaction, method of communication, presentation, collaboration, plus on how each courses comply with students' characteristics and requirements (Bozidar , Dusan, Zorica, Aleksandar, & Branislav, 2011). The article also mentioned that the requirements of a web portal are to make easy access for students and lecturers to have a diversity of useful information that relates with university. It is also a tool to create an interaction between them.

With these various kinds of technologies and systems, learning nowadays is formerly limited in class with the lecture as the only technique of transferring the knowledge (Azeta, Oyelami & Ayo, 2008). A web portal is an electronic means of learning that has the flexibility that can adapt for students and lecturers for online and offline learning and meet student satisfaction as well.

H3: There is a relationship between web portal and student satisfaction.

2.2.4 Student Satisfaction

As university students, their satisfaction can be indicated by how much they are satisfied with the university's system and how well their expectations and career goals are met (Kumudini & Hiroshi, 2019). Student satisfaction can be justified by many elements such as perceived value, university image, available facilities, and service provided by the academic and administrative staff. According to Weerasinghe and Fernando (2017), students' satisfaction is a short-term attitude that results from a judgment of students' educational experiences. Student satisfaction also can be said as a basis of the comparative level of experiences and perceived performance about education services during the learning period.

Inspecting student satisfaction with web-based learning systems can be an important issue for universities and researchers (Sanja, Snezana, & Michael, 2014). This is to ensure that the students' loyalty towards the university maintains and to retain the university's reputation.

The conceptual study is developed based on the empirical finding from the previous research. The study consists of email, social network, and web portal for the independent variables, while student satisfaction as the dependent variable (refer Figure 1).

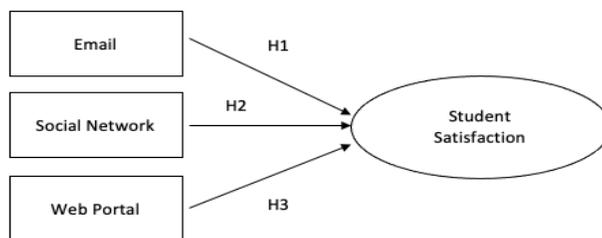


Figure 1: The conceptual research framework. |

3.0 METHODOLOGY

The study used an online survey method to gather data to satisfy the research objectives. The questionnaire was distributed through online platforms which are WhatsApp and Twitter application. This is because the potential respondents can easily access the questionnaire through those online platforms. Respondents were collected from various universities students, courses and level of education.

The questionnaire was being developed with the help of Google form because it was easy and faster for the students to answer the questions provided. It was divided into sections A and B where section A was for general questions and section B consisted of 40 questions. The questions are based on a previous study which in the same area of study and adapted from previous research, Azmeh, (2019). The study applied the Likert scale from 1-Strongly disagree, 2-Disagree, 3-Somewhat agree, 4-Agree, and 5-Strongly agree.

For the preliminary study, the study has collected 100 responses via both applications. The purpose of the researchers selected random different universities students because currently most of the students are now taking their classes online. The different background will lead to different perspectives in answering the questionnaire. The study also used a quota sampling method to gather the respondents. Quota sampling method allows a fairly quick and easy to select respondents which can save time and this method is proven to be useful for market research (Crossman, 2018).

Before the actual data collection, the research conducted a preliminary study to minimise errors in validity and reliability during the data collection process. Validity can be described as a concept that measured the quantitative study accurately (Roberta & Alison, 2015). Hence, this research has been sent to propose the items from a content expert. This thing indicated to ensure the items in the questionnaire are accurate to measure the selected variables.

Whilst the reliability test is conducted to ensure consistency of the items to measure selected variables Ordinally, Cronbach's alpha reliability coefficient will range between 0 and 1.0 which some professionals suggest reliability of 0.7 (or 70%) as it will show that the closer the result to 1.0, the greater the internal consistency (Buelow & Hinkle, 2008). The questionnaire is considered reliable because the reliability test value was more than 0.8 as the optimal level of reliability is when it closed to 1.0.

The study used Statistical Package for the Social Science (SPSS) to analyse the data and the resulted was presented in frequencies. In this study, a simple statistical analysis is performed descriptively while the hypothesis is tested with a correlation test. |

4.0 FINDINGS AND DISCUSSION

Table 1: Respondent demographic

Measurement	Items	Percentage
Gender	Female	83%
	Male	17%
Age	21-23	82%
	18-20	11%
	24-26	5%
	27-29	2%
Program	Degree	96%
	Diploma	3%
	Foundation	1%
Institution	UiTM	33%
	KUPTM	17%
	UKM	14%
	IPHG	8%
	UPNM	4%
	MMU	4%
	UNIMAS	2%
	VICTORIA UNIVERSITY	2%
	UPM	2%
	USM	2%
	POLITEKNIK	2%
	INTEC	1%
	UTM	1%
	Universiti Teknologi Mara	1%
	UNIKL MIIT	1%
	Universiti Malaysia Sarawak	1%
	Universiti Teknikal Malaysia	1%
UTHM	1%	
Sunway University	1%	
INTI International University	1%	
Universiti Teknologi Petronas	1%	

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Table 1 indicated the respondent's demographic analysis. The previous findings from this research showed that only 17% of males participated in this research. In comparison, the percentage of female was 83% which is higher than the male. The percentage of the range of the age from 21-23 years old was 82% which as for the educational level, most of the respondents is from degree level which carries the percentage of 96. This is because the average age of undergraduate students in public institutions are between 18 until 24 years old (The Hamilton Project, 2017). The institutions from the respondents showed the most respondents were from UiTM with 33%. This is due to the reason that UiTM was the past researchers institution plus, it is reliable as mentioned before, degree students that aged between 18 until 24 years old are most likely to be in public institutions rather than private institutions.

Table 2: Descriptive Analysis of E-mail

E-mail	N	Mean	Standard Deviation
(E1) E-mail is considered as an official channel to communicate with my lecturer.	100	3.98	.791
(E2) E-mail design is easy to use.	100	3.74	.925
(E3) E-mail is less in problem to me when communicating with lecturer.	100	3.74	.928
(E4) E-mail will advertise any new news to student.	100	3.71	.977
(E5) E-mail will provide a good service without any technical problems to student.	100	3.55	1.019
(E6) E-mail is effective for me to interact with lecturer by asking questions or regarding the course activities.	100	3.35	1.095
(E7) E-mail usage helps me to develop ability to communicate clearly about the subject with the lecturer.	100	3.34	1.017
(E8) E-mail is easier to use in order to understand the standard of work given by lecturer.	100	3.34	1.047
(E9) E-mail is an appropriate medium for me to develop understanding towards the subject and course activities.	100	3.20	1.025
(E10) E-mail usage is helping me to communicate online and it improves my learning.	100	3.05	1.104

As shown in Table 2 in the E-mail item, most of the respondents agreed that E-mail could be classified as an official channel for them to communicate with their lecturer. The findings indicated that E-mail is important for the students as it is their official channel to communicate with the lecturers during the e-learning phase. It can improve their learning. Students are also comfortable using E-mail as the official platform to send and receive a task from lecturers as it is believed to be reliable and fast.

Table 3: Descriptive Analysis of Social Network

Social Network	N	Mean	Standard Deviation
(S10) Based on my experience, by using social network to communicate online with lecturer and other student, it will help in my learning process.	100	4.21	.715
(S9) Based on my experience, I can tell that social network is an appropriate medium to be used in developing student understanding when it is used in different field of studies.	100	4.12	.742
(S8) Based on my experience, the usage of social network is easier to use in order to understand the standard of work given by lecturer.	100	4.12	.879

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(S7) Based on my experience, I am able to communicate clearly about the subject through social network.	100	4.08	.895
(S6) Based on my experience, it is easier to interact with lecturer and other students through social network in regards to the course activities.	100	4.07	.856
(S5) Based on my experience, to be compared with other medium, social network is the most flexible e-service.	100	4.04	.816
(S4) Based on my experience, the social network page is always up to date and attractive to use.	100	3.99	.847
(S3) Based on my experience, most of the times my lecturer will inform students with any new news through social network.	100	3.97	.834
(S2) Based on my experience, social network does help to facilitate students with quick answer upon any queries given by lecturer.	100	3.95	.892
(S1) Based on my experience, the usage of social network can be considered as an important medium for students.	100	3.92	.837

As shown in Table 3 in the Social Network item, most of the respondents agreed that using the social network helps them communicate online with the lecturer and other students as well as in their learning process. The findings indicated that social network is important for the students to carry out their everyday online classes. It is also preferable because students are more familiar with its uses. Nowadays, generations are more prominent in using social media as their main communication tools. It is proven that social network can enhance their communication, interaction and flexibility in the students' course task and improve their interpersonal skills with lecturers (Azmeah, 2019).

Table 4: Descriptive Analysis of Web Portal

Web Portal	N	Mean	Standard Deviation
(W10) My university official web portal usage is helping me to effectively communicate online.	100	3.82	.833
(W9) My university official web portal is an appropriate medium for me to develop understanding towards the subject and course activities.	100	3.80	.953
(W8) My university official web portal is easier to use in order to understand the standard of work given by lecturer.	100	3.77	.941
(W7) My university official web portal usage helps me to develop ability to communicate clearly about the subject with the lecturer.	100	3.76	.818
(W6) My university official web portal is effective for me to interact with lecturer by asking questions or regarding the course activities.	100	3.69	.940
(W5) My university official web portal can be accessed at any time and any places, can receive instructions, composes and submit assignments.	100	3.55	.989
(W4) My university official web portal is always up to date.	100	3.55	1.009
(W3) My university official web portal provides a separate section for advertising news	100	3.35	1.104
(W2) My university official web portal facilitates reaching any information that I need.	100	3.32	1.081
(W1) My university official web portal design is clear.	100	3.17	1.111

As shown in Table 4 in the Web Portal item, most of the respondents agreed that their university official web portal usage helps them to communicate effectively online with their lecturers. The findings indicated that with the help of their university official web portal, they could communicate effectively during online classes in terms of their subject

and course activities with the lecturers. Web portal existence helps students sort out their subject systematically as the university's web portal design is most likely to ease the students browsing into their courses effectively.

Table 5: Descriptive Analysis of Student Satisfaction

Student Satisfaction	N	Mean	Standard Deviation
(SS10) I was very satisfied with one of the selected medium as it was easy to use.	100	3.96	.764
(SS9) I was very satisfied to receive the information periodically through one of the selected medium.	100	3.92	.748
(SS8) I was very satisfied with one of the selected medium services.	100	3.90	.732
(SS7) I was very satisfied with the ability to communicate with other students through one of the selected medium.	100	3.86	.853
(SS6) I was very satisfied with the ability to communicate with the instructor through one of the selected medium.	100	3.86	.865
(SS5) I was very satisfied with the accuracy of the information from one of the selected medium.	100	3.85	.716
(SS4) I was very satisfied with the sufficient information provided in one of the selected medium.	100	3.85	.845
(SS3) I was very satisfied with the speed from one of the selected medium.	100	3.84	.825
(SS2) I was very satisfied to receive the feedback from instructor on my works through one of the selected medium.	100	3.82	.857
(SS1) I was very satisfied how quickly one of the selected medium loads pages.	100	3.80	.829

As shown in Table 5 in the Student Satisfaction item, the findings indicated that most of the students agreed that one of the mediums satisfy them as it helps them in adapting to online learning. E-mail, Social Network and Web Portal platforms are important for each student to finish their online tasks effectively.

Table 6: Guildford Rule of Thumb table

Value, r	Strength
< 0.2	Negligible Relationship
0.2 to 0.4	Low Relationship
0.4 to 0.7	Moderate Relationship
0.7 to 0.9	High Relationship
>0.9	Very High Relationship

Correlation analysis tests the significant relationship between student satisfaction and the use of e-mail, social network and web portal towards their learning courses with the university. Guildford's Rule of Thumb used to determine the strength of the relationship between the variables. Table 6 showed the Guildford Rule of Thumb.

Table 7: Results of correlation test for E-mail (E) and Student Satisfaction (SS)

	Correlation, r	P Value	Result
E→SS	.429	.000	Significant

Table 7 indicate the finding for the correlation test between e-mail and student satisfaction. It showed a statistically linear relationship ($p < 0.01$); hence H1 is supported and related. The direction of the relationship is positive because e-mail is correlated with students satisfaction during the e-learning process. Therefore, both variables tend to increase. Based on the Guildford Rule of Thumb, e-mail has a moderate relationship with student satisfaction (0.429). The possible explanation for this relationship is that e-mail is an important channel for students to communicate with the lecturers during e-learning as it can improve their learning. Thus, the current study proposed one of the factors that contribute to the effectiveness of e-mail as an online learning tool is that it can be one of the communication channels between students with lecturer and university.

Table 8: Results of correlation test for Social Network (SN) and Student Satisfaction (SS)

	Correlation, r	P Value	Result
SN→SS	.573	.000	Significant

Table 8 indicate the finding for the correlation test between the social network and student satisfaction. It showed a statistically linear relationship ($p < 0.01$) hence H2 is supported and related. The relationship direction is positive because the social network is correlated with students satisfaction during the learning process. Therefore, both variables tend to increase. Based on the Guildford Rule of Thumb, the social network has a moderate relationship with student satisfaction (0.573). The possible explanation for this relationship is social network increases the interaction and have high flexibility for students' e-learning. The current finding suggested that students are satisfied with communication using social network during the online learning process.

Table 9: Results of correlation test for Web Portal (WP) and Student Satisfaction (SS)

	Correlation, r	P Value	Result
WP→SS	.491	.000	Significant

Table 9 indicate the finding for the correlation test between the web portal and student satisfaction. It showed a statistically linear relationship ($p < 0.01$) hence H3 is supported and related. The relationship direction is positive because the web portal is correlated with students satisfaction during the learning process. Therefore, both variables tend to increase. Based on the Guildford Rule of Thumb, the web portal has a moderate relationship with student satisfaction (0.491). The possible explanation for this relationship is that the web portal helps communication regarding the course and subject activities between students and lecturers. The current study suggested that the university web portal need to be clear to fulfil student satisfaction.

5.0 CONCLUSION

From the discussions and evaluations of the results obtained, the research concludes the following points. The study indicates that e-mail, social network and web portal satisfy students in adapting to online learning. However, the social network is the preferable tools for the students to communicate with lecturers and finishing their online courses due to the system flexibility. They also feel comfortable to use it during e-learning process. The study aims to determine which e-learning tools that can fulfil the student satisfaction.

The limitations in this study are researchers should expand the range of data collection process platforms used to distribute the questionnaire other than Google Form, WhatsApp, and Twitter. There are many different options such as Facebook and LinkedIn. Therefore, with the wide range of platforms, future study may observe various respondents from other universities. Besides, this study only focused on university students. It is suggested for future study to include university administrative staff and lecturers as respondents because they also use online tools to communicate. This will results to a better purpose of using e-learning tools among people in university as a whole.

This study uses quantitative research whereby it focuses on the mean and standard deviation where the results of the correlation test were described using Guildford Rule of Thumb. Hence, the data from this study can be significant for future researcher to analyse the use of e-learning tools with student satisfaction. Other than that, the independent variables in this study are only limited to three variables when there are still many options of e-learning tools that student used for online learning. Thus, additional e-learning tools such as applications for virtual class and white board could be added to the current study by future researchers because it meets the nature of university better than the existed tools.

The independent variables that the researchers have used for this study were proven from the respondents' answers which e-learning tools help students in the learning process. Social Network indeed is the most elementary platform used by students as it has the flexibility to support and increase the interaction between students and university. Students can choose from various communication platforms such as WhatsApp, Twitter, or Google Meet to interact with the lecturers.

The efficiency of a web portal relies on the speed and designs itself. The users, like students or lecturers, will register through the website. Sometimes, it will lag if the portal cannot accommodate vast numbers of users at a time. Using e-mail has the least significant relationship with student satisfaction. Commonly e-mail is used for formal interaction, such as sending a finished assignment or letter. Thus, the user only used e-mail depending on the purpose of the business. To conclude, all hypotheses are related and supported. |

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