The Impact of COVID-19 on Students' Satisfaction During Online Learning – An empirical study in Thailand

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ABSTRACT

The aim of this paper is to identify international students' satisfaction with online learning in Thailand. The study used the Technology Acceptance Model, includes Perceived Usefulness and Perceived Ease of Use to understand student's satisfaction on online learning. Furthermore, the study utilizes two additional variables, known as student engagement and internet self-Efficacy to explore whether these variables enhance student's satisfaction or not. The data were collected from high schools and universities in Bangkok, Thailand. Total 51 international students who are studying online from various high school and universities participated in the survey. This paper also considered gender, age, education level, educational institute, CGPA, preferred online platform and number of courses as demographic variables. Bivariate correlation and multiple regression analysis were done using SPSS software. The result revealed that perceived usefulness is significantly associated with student's satisfaction on online learning. The study will create significant contribution for the management of educational institutions. The management need to focus on how they can create a favorable environment for the learners where student's satisfaction on online learning increases.

Keywords: TAM, student engagement, student satisfaction, internet self-efficacy, international student and online classes

INTRODUCTION.

Background

According to the Thailand's Office of higher education, there are over thirty-seven thousand educational institutions in the country. Besides that, there are nearly 20 million students studying in the Thai education system (OHEC, 2017). Basic education in Thailand is distributed into Six years of primary schooling which is known as Prathom 1 to Prathom 6 followed by three years of lower secondary which is known as Mathayom 1 to Mathayom 3 and the last three years of upper secondary schooling is known as Mathayom 4 to Mathayom 6 (OHEC, 2017). According to Ministry of Education Thailand since 2003, compulsory education was extended to nine years, with all students anticipated to achieve Mathayom 6. In the National Curriculum of Thailand, there are eight Core subjects such as; Thai language, Mathematics, Science, Social Studies, Religion, Culture, Physical education, Arts, Careers

and Technology, and Foreign languages. Flexibility is built into the curriculum to combine local wisdom and culture so that it is consistent with set learning standards in each of the core subject groups. The promotion of thinking skills, self-learning strategies, and moral development is at the heart of teaching and learning in the Thai National Curriculum (OHEC, 2017). In Thailand, students not only learn in Thai language, they also study under international programs in the educational institutes.

COVID 19, known as coronavirus is a disease that was discovered in December 2019 (WHO, 2019). According to WHO data, this disease has affected over 59 million people around the world and more than 1 million have died because of Covid-19. It was noticed that this disease can infect people easily at a certain distance and so the governments around the world including Thailand came up with the rule of social distancing, to wash hands more often and to wear face masks whenever people have to go out of their house. At one point, governments around the world locked down the countries and closed down everything to stop the spread of this deadly virus (WHO, 2019). As a result of COVID 19, there is a huge impact on the worldwide educational system, contributing to the near closing of schools, universities, and colleges. Majority of the governments around the world have decided to temporarily close educational institutions to minimize the spread of the COVID 19 (WHO, 2019). In March 2020, Cambridge International Examinations (CIE) released a statement declaring the revocation of Cambridge IGCSE, Cambridge O Level, Cambridge International A and AS Level, and many more exams for this May/June 2020 series across all countries (CAIE, 2020). Since it's all closed temporarily, the educational institutions decided to start with online classes until the government decided to reopen it. Hence, in this pandemic situation, the classes have been changed from going to the campus and studying but to sitting at home and doing online classes. According to Karuppan (2001) online education is teaching a class totally or partially through the internet and online course management tools. And so now every student around the world is doing online classes until the governments decide to reopen the schools and universities and this will only be possible when COVID 19 decreases or the government feels that the situation is under control and it is safe enough for students to have normal classes. Therefore, the purpose of this study is to understand how perceived usefulness (PU), Perceived ease of use (PEOU), student engagement, and internet self-efficacy affected by online classes and whether these factors can give student satisfaction or not during the pandemic.

LITERATURE REVIEW

Technology Acceptance Model (TAM)

Davis (1989) was the principal of the Technological Acceptance Model (TAM) which was derived from Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1977). According to the author TAM is the key model in understanding how people behavior is influenced while using the technology (Davis, 1989). TAM is one of the most effective models for justifying end-user adoption of a wide range of computer-based technologies (Legris et al. 2003). TAM aids in understanding attitudes toward embracing an information-based structure via perceived ease of use for people and perceived utility of the product/service. Al-hawari & Mouakket, (2010) considered TAM to understand students' satisfaction on online learning. Some studies showed that perceived usefulness is a relevant factor for assessing the efficacy of online learning systems and for predicting them (Al-hawari & Mouakket, 2010; Saadé & Bahli, 2005). Perceived usefulness leads to the behavioral purpose of learners to use an online

learning system. TAM is an information systems theory that shows how humans come to accept and use technology just like how normal schooling changed to study via online platforms. The actual system is for pointing out what influences people to use technology. TAM has been one of the most influential models of technology acceptance, with two primary factors influencing an individual's intent to use new technology and those two main factors are perceived usefulness and perceived ease of use. Therefore, this theory has been used to study the satisfaction of students towards attending online classes.

Perceived Usefulness (PU)

Davis (1989) described the term perceived usefulness indicates the degree to which a person feels it can increase its efficiency by using a specific device. Previous researchers have used PU as an indicator to focus on the feelings of people against the modern online educational system and this will indicate whether or not they are satisfied with all these new systems as online classes. Perceived usefulness is a relevant factor for assessing the efficiency of online learning systems and for predicting them. Perceived usefulness leads to the behavioral purpose of learners to use an online learning system (Almahamid et al., 2010). According to Arbaugh (2005) both perceived usefulness was positively connected with student's satisfaction on online courses.

Perceived ease of use (PEOU)

Davis (1989) stated that Perceived ease of use means that the degree to which an individual feels it would be effort-free to use a certain system. and so, it signifies the minimal contribution generated during online classes by students. If it is convenient to use the platform for online classes, learners would be much more inclined to attend the online classes. In a study it was found that perceived ease of use was positively linked with student's satisfaction on online courses (Arbaugh 2005). PEOU shows whether students think that it is easy to use online platforms for attending the classes or not. Previous researchers show that students are facing problems for entering the online classes because of bad internet connection and they also mentioned that it's hard for students to manage because of different time zones (Almahamid et al., 2010). (El Monsour & Mupinga, 2007) Hence it shows that PEOU has a negative relationship with student satisfaction.

Student Engagement

As many researchers have mentioned before, student engagement is characterized as learners who are involved, committed, and involved in their learning, but definitions vary and can also contradict one another. As a result, no specific generally agreed concept exists and involvement means different things to different individuals. And one of the most rigorous concepts is to dissolve engagement into categories of behavioral, emotional, and cognitive engagement, and this potentially makes measuring, particularly when it comes to observing the signs of engagement, easier. However, according to previous researchers they mentioned that professors tend to respond slowly moreover students and professors are not able to know each other because they are able to engage with others (El Monsour & Mupinga, 2007). Hence it shows that the relationship between student engagement and student satisfaction is negative.

Internet Self Efficacy

Internet self-efficacy refers to the decision on the potential or degree of confidence of students to be using the internet for their academic intentions (Scagnoli, Choo & Tian, 2019). This shows how much students are willing to use the internet for academic purposes. internet self-efficacy helps to understand how students are willing to attend online classes and according to previous research, it shows online learning helps improving student's technological skills moreover it helps them to do their classwork or assignment easier and better (El Monsour & Mupinga, 2007). Hence the relationship between internet self-efficacy and student satisfaction in online classes is positive

Student Satisfaction

A short-term attitude resulting from an assessment of the educational experience, resources, and facilities of students can be described as Student Satisfaction (Dziuban et al., 2015). Student satisfaction shows whether students are willing to attend the online classes happily or not or they are facing trouble for joining. According to previous researchers, it shows that students are dissatisfied with online classes and this because more works are given to the students during online classes than normal classes, students are facing trouble to join online classes due to different time zone or having internet problem lastly lack of personal contacts with friends and professors and these factors cause students to be dissatisfied with online classes (Dziuban et al., 2015).

Proposed Hypotheses

H1 - Perceived usefulness will positively impact student's satisfaction on online classes.
H2 - Perceived ease of use will negatively impact the student's satisfaction towards online classes.
H3 - Student engagement will negatively impact student satisfaction towards online classes.
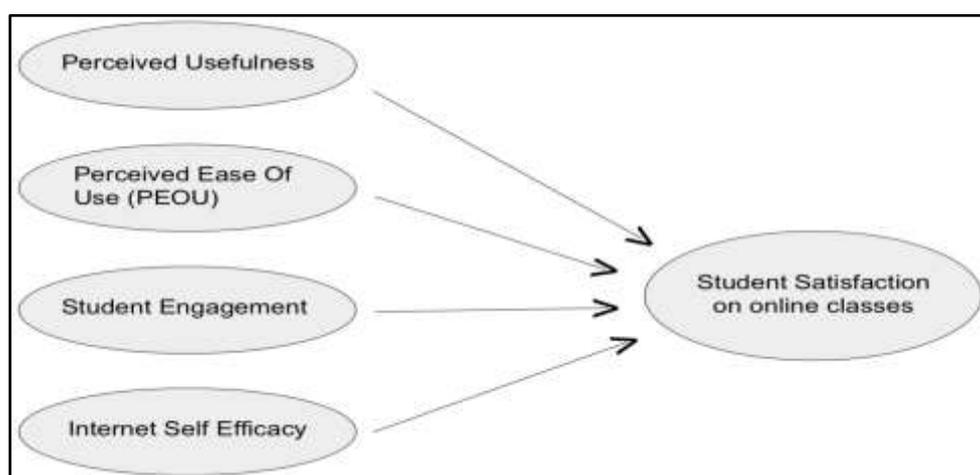H4 - Internet self-efficacy will positively impact on student satisfaction towards online classes.

Figure: Proposed Conceptual Model

METHODOLOGY

Research Design

To operationalize the variables associated with online classes due to the COVID19 pandemic, an online survey was operated to obtain quantitative data to be able to analyze the recommended hypothesis. An empirical study was adopted to understand the connection between PEOU, PU, Student engagement, internet self-efficacy, student satisfaction in online classes. Independent variables are PEOU, PU, Internet self-efficacy, Student engagement, and dependent variable is student satisfaction in online classes. Demographic variables such as age, gender, education level, educational institute, CGPA, number of courses, and online platform for online classes were asked in the survey as well. This study included international students in Thailand and they have helped this research to possible by filling the online survey.

Sample and Participants

The online survey is conducted at both Private and public schools and colleges located in Bangkok, Thailand. International students studying in high school, bachelor's, and master's levels were considered as the sampling frame. International students who are and who did online classes are considered to be respondents in this study. To get the maximum suitable participants, a snowball sampling method has been used in this research. 55 questionnaires were sent via email, messenger, line, and Instagram and a total number of 51 international students from both private and public schools and colleges participated in this survey.

Scale Measurement

The scales used in this survey were adopted from previous literature. Perceived ease of use (PEOU) was measured from the PEOU scale with four items, to measure student satisfaction with online classes. Perceived usefulness (PU) was measured from the perceived usefulness scale. The scale contains four items. Student engagement was also measured by using a four-item scale. Internet self-efficacy was measured by four items scale, the student satisfaction towards online classes scale with four-items. The items used in this survey were measured with a 5-point Likert-scale ranging from 1 which means strongly disagree to 5 which means strongly agree. To measure the opinions or behaviors of respondents' Likert-scale is widely used. Demographic questionnaires covered age, gender, institution, education level, CGPA, and online classes.

Data Collection

The survey was carried out in English as the respondents chosen for this study are studying in an English under international public and private schools and colleges in Bangkok, Thailand. The survey participants were asked whether they are doing online classes now or it's a normal class now before sending the survey link.

Cross-sectional data were collected via an online questionnaire through Google Form during the month of December 2020. The link of Google Form was sent via email, Line, Messenger, and Instagram to the target population. To keep confidentiality no personal data like names,

email addresses were collected. Primary data was obtained from the international students who are currently studying in high school and universities in Thailand.

RESULTS AND DISCUSSION

Demographic Information

The respondents (n=51) who participated in the survey are students studying under an English program. 72.5% (37) are females that participated in this survey and 27.5% (14) are males that have participated in this survey. The age group of the participants was from the age 17 - 30 and the greatest number of the participants that participated were age 18 and the least was the age from 26 - 30. The maximum of the participants 41(80.4%) were from the Bachelor program, followed by 8 (15.7%) were from high school and 2 (3.9%) were from the Master's program. Moreover, most of them belong to Siam university's international program with a CGPA of 3.25 - 4.00. The results of the survey show that all of the 51 participants have attended online classes. The respondents preferred online platforms are Zoom meeting with 58.8% and Google meet with 29.4%. The further information will be shown in the figure below (Figure 1.1-1.5).

As you can see in Figure 1.1 it shows that female students with 72.5% have participated in this paper more than male students which is 27.5%. And Figure 1.2 shows that students under bachelor's degree have participated in this paper with 80.4% which is more than the rest.
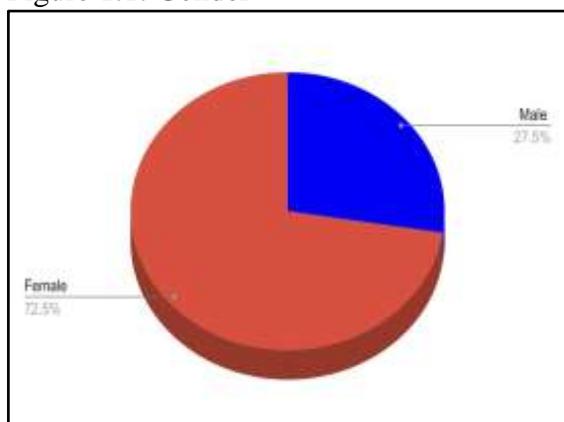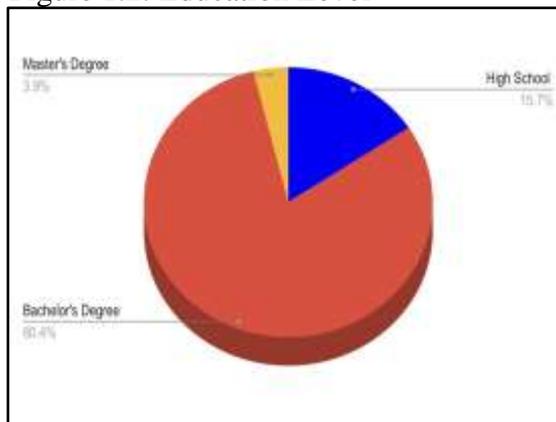
Figure 1.1: Gender

Figure 1.2: Education Level

Most of the Students that participated in this paper have CGPA more than 3.5 which is 37.3% flowed with CGPA 3.25-3.50 with 13.5% as shown in Figure 1.3. And currently students are student online for 1 - 2 courses as shown in Figure 1.4.
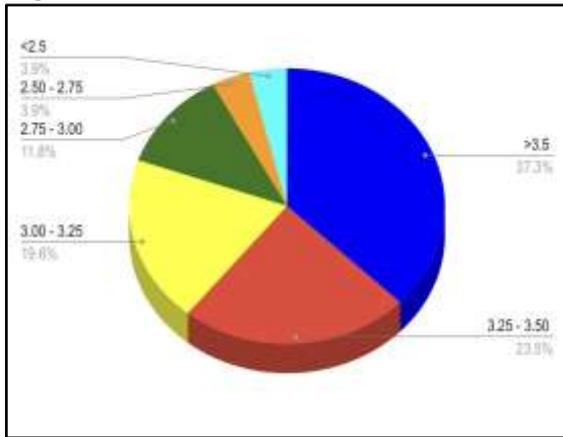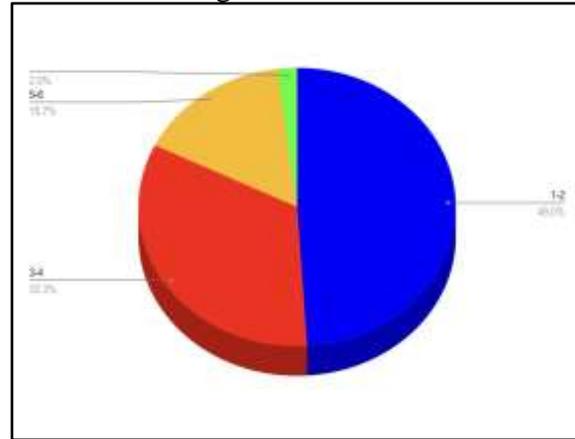
Figure 1.3: CGPA   Figure 1.4: Number of courses

The below table1 and 2 shows the ages of the students who participated in this paper are more in the age of 18 - 21. Table 1.2 shows that participants preferred online platforms for online classes are Zoon meeting with 30 responses and Google meet with 15 responses.

Table 1.1: Age

Age	Percentage of participants
17	2(3.9%)
18	14(27.5%)
19	10(19.6%)
20	5(9.8%)
21	13(25.5%)
24	2(3.9%)
25	2(3.9%)
26	1(2%)
27	1(2%)
30	1(2%)

Table 1.2: Preferred online platform

Online Platform for classes	Number of participants
Zoom meeting	30 responses
Google Meet	15 responses

Big Blue Button	1 response
WebEx	1 response
Microsoft Team	2 responses
Blackboard Collaborate	1 response
None	1 response
Skype	-

Correlation Analysis

Bivariate correlation has done between Perceived Ease of useful (PEOU), Perceived Usefulness (PU), Student Engagement, Internet Self Efficacy and Student satisfaction. According to correlation analysis, it was noticed that PEOU has a negative correlation with student satisfaction (r = -0.046, p value = 0.747) however the P value is not significant, for PU it shows that PU has a positive correlation with student satisfaction (r = 0.793, p value = .000) and the P value is statistically significant. For student engagement according to the correlations shows that student engagement has positive correlation with student satisfaction (r = 0.028, p value = 0.846) but its P value is not statistically significant and lastly for Internet self-efficacy it shows that internet self-efficacy has a positive correlation with student satisfaction (r = 0.043, p value = 0.766) however P value is not significant. These information are from the table below (Table 2.1).

Table 2.1: Correlations

Correlations

		PEOU	PU	SE	ISE	SS
PEOU	Pearson Correlation	1	.057	-.147	.030	-.046
	Sig. (2-tailed)		.692	.302	.836	.747
	N	51	51	51	51	51
PU	Pearson Correlation	.057	1	-.135	-.031	.793**
	Sig. (2-tailed)	.692		.346	.831	.000
	N	51	51	51	51	51
SE	Pearson Correlation	-.147	-.135	1	.300*	.028
	Sig. (2-tailed)	.302	.346		.032	.846
	N	51	51	51	51	51
ISE	Pearson Correlation	.030	-.031	.300*	1	.043
	Sig. (2-tailed)	.836	.831	.032		.766
	N	51	51	51	51	51
SS	Pearson Correlation	-.046	.793**	.028	.043	1
	Sig. (2-tailed)	.747	.000	.846	.766	
	N	51	51	51	51	51

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

*. Correlation is significant at the 0.05 level (2-tailed).

Linear Research Analysis

As shown in Table 2.2. the coefficient beta for each value has computed with Perceived ease of use (PEOU), Perceived usefulness (PU), Student engagement, Internet self-efficacy on student satisfaction towards online classes of international students from both private and public schools and universities. From the result it was noticed that Perceived usefulness (PU) have positive relationship on student satisfaction towards online classes (β = 0.814, p value = 0.000) and its p value is significant. Hypothesis 2 is statistically significant. For PEOU, it showed that there is a negative relationship between perceived ease of use (PEOU) towards student satisfaction on online classes (β = - 0.077, p value = 0.389). But the p value is not statistically significant and though hypothesis 2 is supported but not statistically significantly. The result for the relationship between student engagement and student satisfaction shows that they have positive relationship between (β = 0.116, p value = 0.219) however its p value is not significant and its hypothesis 3 is not significantly related as well which is similar to the last factor of the paper which is internet self-efficacy, it result shows that internet self-efficacy have positive relationship between student satisfaction on online classes (β = 0.043, p value = 0.702) however its p value is not significant and Hypothesis 4 is not supported as well. Nevertheless, from the multiple regression analysis it shows that adjusted R Square for this model is R2 = 0.624 which means 62.4 percent can be explained from this model. The model is shown in Table 2.2 and 2.3 below.

Table 2.2: Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.610	1.093		-.558	.580		
	PEOU	-.130	.149	-.077	-.869	.389	.971	1.030
	PU	.997	.107	.814	9.289	.000	.980	1.020
	SE	.226	.182	.116	1.246	.219	.872	1.147
	ISE	.067	.174	.035	.385	.702	.904	1.106

a. Dependent Variable: SS

Table 2.3: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.809[a]	.654	.624	.69495

a. Predictors: (Constant), ISE, PEOU, PU, SE

The regression Model
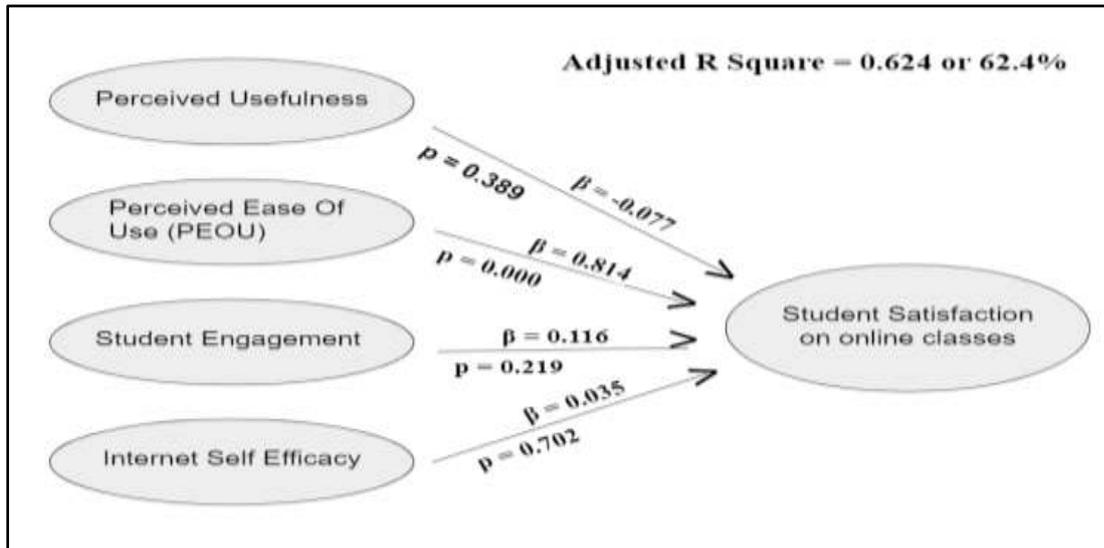
Discussion

The paper is to understand about the international students' satisfaction towards online learning from both high school and universities in Thailand by using Technology acceptance model which includes Perceived usefulness and Perceived Ease of Use. Moreover, the paper has used two more factors as well and it is known as Student Engagement and Internet Self Efficacy. Perceived Usefulness (PU) is the only relationship that the Hypothesis is significantly related to the previous research (Almahamid et al., 2010). Probably when students understand that the platform is useful for the learning, they have higher tendency to adopt it. On the other hand, rest associations which were Perceived Ease of use (PEOU), Student Engagement and internet self-efficacy were not significantly related to student's satisfaction on online learning. It is assumed that, students feel difficulty in learning online classes alone, as there are no face-to-face communications with other students and teachers, thus they are not satisfied with the learning. At the same time, though students might think that their self-efficacy is higher, but when it comes to learning online, they might be struggling coping with the smooth operation of the online classes, to listen or raise question to the instructor. Apart from that, the situation covid-19 has created tremendous stress among everyone, and due to this factor, it might be difficult for the students to be engaged completely with the online learning which can create dissatisfaction.

Perceived usefulness has a positive relationship on student satisfaction towards online classes which is consistent with previous study (Yang et al. 2003) and this is because using online to attend classes is useful because it helps the students to do any sort of assignments or class activities and it helps students and teachers to attend the classes from anywhere and it is supported by the previous researchers as well (Almahamid et al., 2010). Though the other three variables are not significantly related but still in the end this paper's model summary shows that the adjusted R square is 0.624 which is equal to 62.4% this mean it's good according to the paper with only 1 factor that is significantly related and it has positive relationship on the student satisfaction towards online classes.

CONCLUSION AND RECOMMENDATION

Conclusion

Since coronavirus or Covid 19 occurs to the whole world from the end of the year 2019 and the government has decided to close educational institutions temporarily from the starting of march 2020 to stop spreading the virus till the time the government decided to open again only when the situation becomes safer. Since all the schools and universities are closed around the world students are forced to attend online classes. Since students are attending online classes now this paper has been used to understand the satisfaction of international students from both high school and universities in Thailand towards online classes by using TAM (Perceived usefulness and Perceived ease of use), student engagement and internet self-efficacy. When students find the learning is useful for them, their satisfaction increases automatically which is also seen in this study. To increase the engagement of students' instructors, need to be innovative to draw the attention through interactive sessions where students can participate more and feel valuable. Student's engagement will lead to satisfaction, as they will understand the value of online learning and increase higher contribution. The result of the study provided some valuable information, the management needs to support the learners to be more engaged with various online activity. Learner interaction is very important to create student's engagement that ultimately create satisfaction. Authority must encourage both instructor and students to have more constructive exchange of information where students show higher engagement. Students need have higher access with the instructor for any sort of clarification, that will help students to be engaged in the online learning.

According to the understanding of the paper it shows that students are more dissatisfied with online classes than being satisfied with joining online classes. And this is because students don't feel connected to the teachers or to their classmates since it's online and they can't meet each other physically, students face trouble while joining online classes such as weak WIFI or electricity problems and many more. The best way to handle these problems is that teachers should help students out whenever their students face problems, teachers should provide entertaining class activities so that students are willing to be engaged with the class and students should cooperate with teachers as well so that it will be easy for both sides to join online classes. These methods are the best method according to this situation.

Recommendation

This study has given some understanding on student's satisfaction for online learning. In future, the study can consider the other components of TAM model to understand student's actual behavior on online learning. After learning the actual behavior, the management can revise their curriculum in future. As we know that, the present curriculum was prepared for classroom activity and ignored the aspect of online learning. Actual behavior towards online learning will help to create an interactive curriculum to have maximum learning. The study further can consider some more variables like enjoyment, flexible learning, computer self-efficacy, communication channel, instructor support, peer support to understand student's satisfaction on online learning. The future study should include Thai students to have a better understanding of student's satisfaction.

Limitation of the study

Like other studies, this study has some limitations. Time constraint is the biggest limitation for this study. Secondly, data were collected only from students who study English or international program. Thus, it was difficult to understand the mindset of Thai students on online learning. Another major drawback was the pandemic, as students are studying online, therefore, it was challenging to collect the data as planned.

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