

Effect Of Online Learning on Student's Satisfaction

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ABSTRACT

The purpose of this study is to investigate the factors that determine how students perceive their learning outcomes and how those factors affect student satisfaction. The data was collected from Siam University students in every faculty to know the study. A selective sampling method was used to collect research data through an online survey using google form. Total 120 students who study in university, and did online classes participated in the survey. The study found that the factors–instructor interaction in online classes, student motivation, peer interaction, student engagement, perceived self-efficacy and facilitation–are positively influencing students' perceived learning outcome and student satisfaction. The study will be useful for academics and educators in identifying the elements that will improve students' learning outcomes and levels of satisfaction in online

Keywords: Student Satisfaction, Online Learning, Perceived Learning Outcomes, Perceived self-Efficacy, Student Engagement

INTRODUCTION

In today's world, the interaction between learners and instructors in online learning is not like in traditional ways, rather it is constantly changing (Eom, Ashill, & Wen, 2006). Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits (UKEssays November 2018). E-learning has established a solid reputation in the academic community thanks to the development of technology and the Internet. E-learning is occasionally categorized as distance education (Bates, 2005). Organizations frequently use e-learning due to its constant global training, shortened delivery cycle time, increased learner convenience, decreased information overload, improved tracking, and lower costs (Welsh et al., 2003). E-learning has been effectively used in both academia and business, with reports of improved teaching and learning, as well as higher revenue, better learning outcomes, and higher levels of student satisfaction (Chang, 2016). In order to determine if traditional face-to-face learning is more effective than e-learning, some researchers have examined learning efficacy (Cavanaugh and Jacquemin, 2015; Walczak and Taylor, 2018). There are, however, few theoretical investigations on the variables influencing learning efficacy (Gamiz-Sanchez et al., 2016; Pradana and Amir, 2016; Shin and Kang, 2015). Students and e-learning providers alike benefit from an understanding of the elements impacting learning effectiveness since both parties may use it to maximize learning outcomes. The ever-changing e-learning environment

has made it necessary to evaluate the accreditation's quality as traditional quality measurement methodologies cannot adequately reflect the new web-based environment (Blicker, 2005). E-learning efficiency can be used to gauge the calibre of an online course. The extent to which the learning outcomes are attained is what is referred to as learning effectiveness (Blicker, 2005). According to the (ECTS Users' Guide from 2005, on page 47), "Learning outcomes are assertions of what a learner is expected to know, understand, and/or be able to demonstrate after completion of a process of learning." The paradigm changes from teacher-centered to learner-centered learning approaches is largely to blame for the focus on the learning outcomes to explain student achievements (Ziliukas and Katiliut e, 2015). According to Kennedy (2006), learning outcomes put the learner's accomplishments and what they can show at the end of a course or activity before the instructor's expectations. According to the literature (Agudo-Peregrina et al., 2014; Renaud and Van Biljon, 2008), behavioral intentions result in actual behaviours. Additionally, there is a strong link between learning effectiveness and real grades (Kankanhalli et al., 2011). As a result, monitoring learning outcomes helps a variety of stakeholders, including students, teachers, academic advisers, accreditation organizations, and others, accomplish set learning outcomes (Mahajan and Singh, 2017). Task-based peer engagement is a key component of communicative classrooms. By giving a framework for practice and meaningful usage of the target language as well as more opportunities for individual production, it enhances teacher-fronted engagement (Jenefer Philp 2010). Accordingly, this study will focus on the student satisfaction and whether the perceived learning outcome either perceived self-efficacy or student engagement has a positive influence on Siam university students as study during their online classes of study in any faculty of the Siam University.

Purpose of the study

The main purpose of the study is to explore and identify the link between the perceived learning outcomes and student satisfaction among Siam university students. The study will also focus on Siam University students' student engagement and whether it has any influence to student satisfaction. Therefore, the researcher views that a study on the student satisfaction of Siam university students during their online classes will have interesting and meaningful outcomes which are useful for the students and academic.

Objectives of the study

Intent to focus on student satisfaction among Siam university student during their online classes, the study aims to attain the following objectives:

- a. To examine the relationship between the perceived learning outcomes and student satisfaction among Siam University students studying in online classes.
- b. To explore whether student engagement influence on the student satisfaction among Siam university students during their online classes.

Literature Review

Online learning

Since its introduction in 1995, online learning has grown to play a vital role in education across the globe (Singh & Thurman, 2019). Online learning is the term for a digital learning environment where, in contrast to traditional learning, there are no actual peers to interact with and there is flexibility in terms of time and place (Baber, 2020). In general, online learning is the activity of learning with the intention of facilitating the learning process with the use of a computer or other electronic device (Allen, 2016). In addition, online learning is a method of instruction that makes use of computers, telecommunications, and multimedia (audio, video) as the primary delivery systems and means of interaction between teachers and students (Allen, 2016). Gradually, online learning has become popular, and many students found online learning to be very appealing because it allows for participation flexibility, ease of access, and convenience (Croxtton, 2014). Usually in online learning, the learning interaction between students and instructors are increased as it is easier to update course information and have archiving capabilities (Bates, 2005).

In online learning, there are three ways known as asynchronous, synchronous and hybrid online learning (Amiti, 2020). Asynchronous online learning focuses on collaboration between students and teachers through message boards, or emails even when everyone is not connected at the same time. In contrast, the synchronous approach requires that both the teacher and the students be present at the same time, collaborate as they would in a traditional classroom, and meet online on whichever platform is chosen to be used (Amiti, 2020). But for hybrid system, it is the combination of both synchronous and asynchronous online learning (Amiti, 2020). Asynchronous online learning is generally preferable due to its flexibility, which allows students to balance their studies with other obligations. On the other hand, synchronous online learning makes people more sociable as they get the opportunity to ask and get feedback in real time. As a result, academics currently seem to be more interested in comprehending the benefits and downsides of asynchronous and synchronous e-learning rather than seeking to define the "superior" medium. Hence, that student can learn more experience from peer interaction through online learning.

Peer Interaction

Peer interaction is crucial for the success of online learning and considered as the foundation of education. In general, peer interaction is considered as any form of communication that takes place between students with little to no teacher involvement (Aghaee & Keller, 2016). In addition, Kuh (1995) argued that peer interactions among students can enhance academic growth, analytical and problem-solving abilities, and self-esteem. Additionally, Philip et al., (2013) mentioned that for a communicative classroom, peer interaction is a key component in general, peer interaction helps them to grow more in knowledge as they share their point of view and learning experiences with others (Pascarella & Terenzini, 1991). According to Sato and Ballinger, 2016, problems and obstacles that students encounter can be resolved quickly when they communicate with peers rather than others, such as teachers students are expected

to work independently and frequently ask for additional clarification and feedback while conversing with their peers (Peeters & Ludwig, 2017; Sato, 2013).. According to Coolahan et al., (2000), students who engage in better peer interactions are more likely to actively participate in class activities, show high levels of attention, and be persistent than students who engage in poorer quality peer relationships.). Therefore, it is suggested that peer interaction is important for promoting engagement in learning.

Instructor interaction

For online learning, instructor interaction is essential and a greater predictor of student satisfaction (Croxtton, 2014; Moore, 2012). The teacher engages with the class both personally and collectively. Throughout the course, the instructor will interact with the entire class frequently (at least once per week) (for example, through a course announcement, generalized feedback on activities or assignments, etc.). In general, positive interactions between teachers and students result in learning settings that better support students' academic, emotional, and developmental needs.

Instead of employing traditional teaching methods, an online instructor's job is to empower students' critical thinking while fostering autonomy and accountability (Huynh, 2005). Jones (2006) noted that in an online class, the instructor should stimulate dialogue both between students and between students and between students and the instructor. A key factor in determining the caliber of online learning is the instructor's facilitation and social presence (Ladyshevsky, 2013).

Ku, Tseng, and Akarasriworn (2013) proposed that interaction is a key component of perceived student learning and motivation, particularly in online courses. In general, the instructor's primary responsibility in online learning environments is to establish his presence and personality in the course material, conversations, and activities (Shea, Li, & Pickett, 2006). By asking students for their opinions on the course and using those opinions to improve the course, instructors can enhance online training and "engender a sense of caring"(Jaggars et al., 2013, p. 6).

Student Engagement

Numerous studies mentioned that for academic development, educational activity and practices are key predictor for student engagement (). According to Bomia et al., (1997, pp. 294) student engagement is "Students' willingness, need, desire, and compulsion to participate in, and be successful in, the learning process" (Bomia, Beluzo, Demeester, Elander, Johnson, & Sheldon, 1997, p. 294). In addition, Briggs (2015) mentioned student engagement as the degree of interest displayed by students, their interactions with other students, and their desire to learn about the subjects. In general, engagement focuses on individuals' dispositions or attitudes toward classroom experiences and lifelong learning, looking beyond cognitive skills acquired or mastered (Mandernach, Donnelly-Sallee, & Dailey-Hebert, 2011).

Student involvement is influenced by a number of emotional elements, such as attitude, personality, motivation, effort, and self-confidence (Mandernach et al., 2011). Students are more likely to be active in their education when they are driven to succeed in their classes, invested in their want to learn, and ready to put forth the work required by their professors (Mandernach et al., 2011). Jaggars and Xu (2016) discovered that in online courses, student

grades were positively connected with the level of engagement within the constraints of the course. Instructors can more successfully create classes and activities that will inspire students to be more active participants in their learning and coursework by assessing the amount of student engagement and taking into account these affective qualities (Jennings & Angelo, 2006; Mandernach et al., 2011).

“According to Mandernach et al., (2011 p.277), the effects of instructional activities give a more precise picture of the teaching-learning dynamic when student engagement is higher.

Self-Motivation

A person's internal drive to perform or advance toward a goal is known as motivation (Harmon-Jones, Harmon-Jones, & Price, 2013). Cole, Feild, and Harris (2004) mentioned that the ability, creativity, and readiness of pupils to learn and participate in classroom learning were identified as student motivation. Human motivation is also influenced by the learning environment. Bolliger, Supanakorn, and Boggs (2010) mentioned that maintaining student satisfaction in a virtual classroom environment requires motivation. Several authors claimed those who are very motivated will succeed online more than students who are less motivated (Barbour & Reeves, 2009; Hsu, Wang, & Levesque-Bristol, 2019; Nelson, Oden, & Williams, 2019).

Self-motivation is the cornerstone of self-regulated learning (Smith, 2001). Self-motivation is the energy that comes from inside and directs action toward a specific objective (Zimmerman, 1985, 1994).

Perceived learning Outcome

The term perceived learning refers to a student's self-report of knowledge gain, generally based on some reflection and introspection (Sitzmann, Ely, Brown, and Bauer 2010). Student satisfaction and students' perceptions of their learning, taken together, can help determine how effective is online learning (Gray and DiLoreto, 2016). Richardson and Swan (2003) indicated a strong relationship between students' happiness with online learning and their overall perception of their learning. The same strong association was confirmed by Swan (2001) and Duque (2014). Marks, Sibley, and Arbaugh (2005) found that the perceived student learning outcome is a good predictor of student satisfaction in online learning, which claimed that a satisfied student is an immediate result of a successful learning experience. Ikhsan, Saraswati, Muchardie, and Susilo (2019) discovered that in the online setting, perceived learning outcomes had a favourable impact on student satisfaction.

Perceived self-efficacy

Self-efficacy denotes the extent to which individuals possess task or stress management abilities, including the overall self-confidence in managing the intricacies of different environmental contexts (Zimmerman and Kulikowich, 2016). The idea is also connected to psychological states, behavior, and levels of motivation. (Zimmerman and Kulikowich, 2016). In addition, self-efficacy predicts how confident people are in their ability to fend off. In particular, self-efficacy for learning online refers to people's capacity for perseverance when engaging in a distance-learning environment (Zimmerman and Kulikowich, 2016). Students who had high levels of self-efficacy for studying online expressed happiness with their online

education (Alqurashi, 2016). (Naji et al., 2020), there is still a dearth of study on technology-related self-efficacy that motivates learning. It was deemed essential to investigate the effects of online learning self-efficacy on online learning satisfaction as a result.

Student Satisfaction

The attitude that results from an evaluation of students' educational experiences, services, and facilities offered by the school or university is known as student satisfaction.

The concept of satisfaction is intricate and has many applications. It is expressed and used widely in a variety of academic fields, including sociology, economics, law, psychology, urban and regional planning, marketing, music, and entertainment).

The degree of student satisfaction in conventional and online settings has been the subject of numerous research. Dziuban, Wang, and Cook (2004) concluded that if students felt their professors effectively communicated with them, assisted or encouraged their learning, organized the course effectively, showed interest in their learning and progress, showed respect for students, and accurately evaluated their work, they were more likely to rate courses and instructors with satisfactory ratings. According to findings from another study, students who took part in cohorts with their peers and engaged in thorough feedback exchanges with faculty members felt satisfied with their academic experiences (Shea, Fredericksen, Pickett, & Pelz, 2003).

Bangert (2006) four aspects, including interaction and communication between students and instructors, time spent on task, active and engaged learning, and peer cooperation, have been linked to student satisfaction in online courses. Another study assessed how much asynchronous audio feedback and teacher presence were perceived by students as aspects of community in online courses (Ice et al., 2007).

Proposed Hypothesis

From the above discussion the following hypotheses are proposed:

- H1 – Peer interaction has a positive impact on student's engagement in online learning
- H2 – Instructor interaction has a positive impact on student's engagement in online learning
- H3 - Student Engagement has a positive impact on perceived learning outcome
- H4 - Self-Motivation has a positive impact on perceived learning outcome
- H5 – Perceived learning outcome has a positive impact on student satisfaction
- H6 – Perceived self-efficacy has a positive impact on student satisfaction

Proposed Conceptual Framework

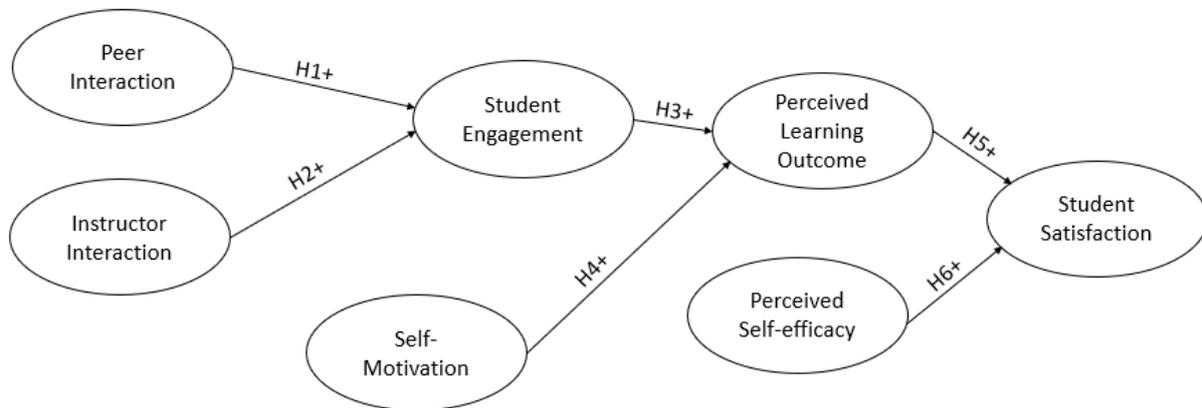


Figure 1: A conceptual framework of effect of online learning on student satisfaction.

Methodology

Research design

To initiate the variables related to student satisfaction by students in Siam University, an online survey was conducted to obtain quantitative data to be able to examine the recommended hypotheses.

Sample and Participants

An online survey was conducted at the Siam University in Bangkok, Thailand. Students who are mostly undergraduate level courses in English and Thai were considered as survey frame. The participants were from Asian, European, and African countries (Thailand, Bangladesh, Nigeria, South Korea, Myanmar, India, Finland, Cambodia, England, Philippines, and Germany). Moreover, students who studied online classes are eligible to be the respondent for this study. To get the maximum participation convenience sampling method was adopted. 180 questionnaires were sent via line, Instagram, QR Code and Facebook, and a total number of 120 students from Siam University participated in this survey. The participants from the Bachelor of Business Administration program were from the first, second, third and fourth year.

Data Collection

To conduct the survey online questionnaire was being adopted. The survey was carried out in English and Thai as the respondents chosen for this study are studying in Siam University in Thailand. The data were collected via an online questionnaire through Google Form during the month of August to October 2022. The link of Google Form and QR code was sent via Line, Instagram, and Facebook to the target population. To keep the anonymous no personal data

like names, email addresses were collected, and participants were told that at any point, they can withdraw from the survey. Data was obtained from the Siam University students who are currently studying. The survey's participants did not get any financial rewards.

Operationalization of the variables

In the research, there are six independent variables i.e., peer interaction, instructor interaction, student engagement, self-motivation, perceived learning outcome, perceived self-efficacy and student satisfaction is the dependent variable. In the data calculation, reliability test of each variable was calculated. To authenticate the internal consistency, Cronbach's alpha coefficient was examined. For testing the hypotheses, regression analysis was computed.

Data Analysis Technique

Statistical Package for the Social Science (SPSS) version 25 was used to examine the data. The responses were inserted and saved in the (.sav) format for SPSS calculation. After that, the mean comparison was carried out using SPSS between demographic information, and comparison of the student satisfaction. Pearson's bivariate correlation was also carried out to find the association between the independent, and dependent variables. Adding some control variable, the result was analyzed to draw the interference for testing the proposed hypothesis.

Results and Discussion

Demographic information

The respondents (n=120) who participated in the survey were from Thailand, Bangladesh, Nigeria, South Korea, Myanmar, India, Finland, Cambodia, England, Philippines, and Germany. Among the respondents there were 57 (47.5%) female and 63 (52.5%) are male students.

Table-1: Demographic profile

Items	Options	Frequency
Gender	Male	63 (52.5%)
	Female	57 (47.5%)
Nationality	Thai	91 (75.83%)
	Bangladesh	02 (1.67%)
	Nigeria	03 (2.5%)
	South Korea	01 (0.83%)
	Myanmar	14 (11.67%)

	India	03 (2.5%)
	Finland	01 (0.83%)
	Cambodia	01 (0.83%)
	England	01 (0.83%)
	Filipino	01 (0.83%)
	German	02 (1.67%)
Study Year	First Year	29 (24.2%)
	Second Year	26 (21.7%)
	Third Year	28 (23.3%)
	Fourth Year	37 (30.8 %)

Analysis of the survey

A compilation and calculation of the survey's findings was done. The process was documented step by step, and each sub-factor was accurately measured.

Correlation Analysis

Bivariate correlation was calculated between peer interaction, instructor interaction and student engagement, student engagement, self-motivation, perceived learning outcomes, perceived self-efficacy and student satisfaction. It was observed that peer interaction ($r = 0.401$, $p = .000$) and instructor interaction were ($r = 0.504$, $p = .000$) positively correlated with student engagement. Student engagement was also positively correlated with perceived learning outcomes ($r = 0.625$, $p = .000$). It was also found that self-motivation was positively correlated with perceived learning outcomes ($r = 0.372$, $p = .000$) It was further noticed that perceived learning outcomes ($r = 0.702$, $p = .000$) and perceived self-efficacy ($r = 0.603$, $p = .000$) were also positively correlated with student satisfaction. From the table below it was observed that all the correlations were significant at 0.001 level (2-tailed). Table 2 exhibits correlations among all the variables.



Table-2: Pearson’s Correlations of the variables

		Correlations						
		PI	II	SM	SE	PLO	PSE	SS
PI	Pearson Correlation	1	.647**	.408**	.401**	.329**	.386**	.432**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	120	120	120	120	120	120	120
II	Pearson Correlation	.647**	1	.562**	.504**	.415**	.422**	.533**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	120	120	120	120	120	120	120
SM	Pearson Correlation	.408**	.562**	1	.482**	.372**	.263**	.382**
	Sig. (2-tailed)	.000	.000		.000	.000	.004	.000
	N	120	120	120	120	120	120	120
SE	Pearson Correlation	.401**	.504**	.482**	1	.625**	.414**	.460**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	120	120	120	120	120	120	120
PLO	Pearson Correlation	.329**	.415**	.372**	.625**	1	.427**	.702**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	120	120	120	120	120	120	120
PSE	Pearson Correlation	.386**	.422**	.263**	.414**	.427**	1	.603**
	Sig. (2-tailed)	.000	.000	.004	.000	.000		.000
	N	120	120	120	120	120	120	120
SS	Pearson Correlation	.432**	.533**	.382**	.460**	.702**	.603**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	120	120	120	120	120	120	120

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

Exploratory Factor Analysis and Reliability Test

The result of Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO and Bartlett’s Test) showed that student satisfaction had the highest factor loading with 0.821 ($p = .000$) and self-motivation had the lowest factor loading with 0.500 ($p = .000$). Table 3 exhibits the factor loading of all the variables. The factor loading of peer interaction was 0.736 ($p = .000$), instructor interaction was 0.777 ($p = .000$), student engagement was 0.729 ($p = .000$), perceived learning outcome was 0.651 ($p = .000$), and perceived self-efficacy was 0.800 ($p = .000$).

Table 3: Kaiser Meyer-Olkin test for factor instrument (KMO and Bartlett’s Test)

VARIABLES	KMO*	SIG.
Peer Interaction	.736	.000

Instructor Interaction	.777	.000
Student Engagement	.729	.000
Self-Motivation	.500	.000
Perceived Learning Outcomes	.651	.000
Perceived Self Efficacy	.800	.000
Student Satisfaction	.821	.000

Internal reliability consistency of the all the variables were found a moderate level, the reliability coefficient (Cronbach's alpha) was peer interaction = 0.680, Instructor interaction= 0.687, student engagement = 0.644; self-motivation = 0.327, perceived learning outcomes=0.866 perceived self-efficacy = 0.830, and student satisfaction = 0.926.

Table 4: Cronbach's alpha for the variables

VARIABLES	ALPHA
Peer Interaction	.680
Instructor Interaction	.687
Student Engagement	.644
Self-Motivation	.327
Perceived Learning Outcomes	.866
Perceived Self Efficacy	.830
Student Satisfaction	.926

Linear Regression analysis

The coefficient beta figure for each variable was obtained after computing peer interaction and instructor interaction with student engagement followed by perceived learning outcomes. Self-motivation and student engagement was computed with perceived learning outcomes followed by student satisfaction. Perceived self-efficacy as well followed by student satisfaction of the Siam university students studying in any faculties. From the regression analysis result it was noticed that there is a positive relationship between peer interaction and student engagement ($\beta = 0.401$, p value $< .000$) with the R square of .161 (i.e., Peer Interaction explains around 16.1% of student engagement) and instructor interaction and student engagement ($\beta = 0.504$, p value $< .000$) with the R square of 0.254 (i.e., Instructor Interaction explains 25.4% of student engagement) that supports H1 and H2 and both the hypotheses are significantly related. The result revealed that the student engagement and perceived learning outcomes ($\beta = 0.625$, p value $< .000$) are positively related with the R square of 0.391 (it explains 39.1% between engagement and satisfaction) and significant that supports the H3. On the other hand, student motivation ($\beta = 0.382$, p value $< .000$) and perceived learning outcomes ($\beta = 0.702$, p value $< .000$) both are positively related and significant with the student satisfaction with the R square of 0.138 (i.e., the combination of each motivation explains about 13.8% on student satisfaction) that supports the H4 and H5. From the result between perceived self-efficacy and student satisfaction ($\beta = 0.603$, p value $< .000$), a significantly positive relationship was observed with an R square of 0.363 (i.e., around 36.3% can be explained between self-efficacy and student satisfaction) that also supports the H6.

Table 5: Hypothesis results

Hypothesis	Independent Variables		Dependent Variables	β	P	R ²	Remarks
H1	Peer Interaction	→	Student Engagement	.401	.000	.161	Accepted
H2	Instructor Interaction	→	Student Engagement	.504	.000	.254	Accepted
H3	Student Engagement	→	Perceived Learning Outcomes	.625	.000	.391	Accepted
H4	Self-Motivation	→	Perceived Learning Outcomes	.372	.000	.138	Accepted

H5	Perceived Learning Outcomes	→	Student Satisfaction	.702	.000	.492	Accepted
H6	Perceived Self Efficacy	→	Student Satisfaction	.603	.000	.363	Accepted

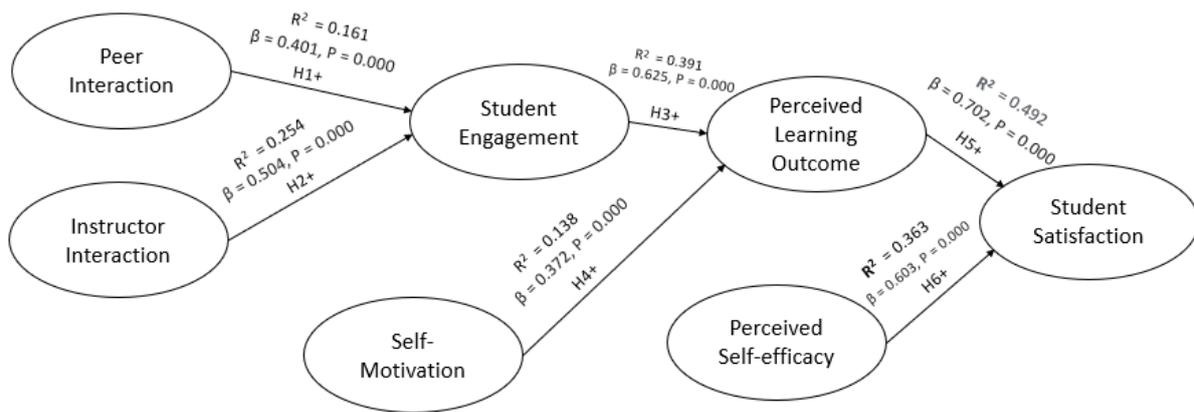


Figure 2: Linear regression model

Discussion

The reason for this study was to examine the student satisfaction of Siam university students on their online classes. The study also focused on if the perceived learning outcomes and perceived self-efficacy of Siam university students can increase an online learning, resulting the student satisfaction.

Perceived learning outcomes strongly influenced the student satisfaction and therefore the together, student satisfaction and perceived learning among students can provide a clearer picture of the success of online learning. According to Richardson and Swan (2003), there is a strong association between students' overall perceptions of their education and their satisfaction with online learning. Swan (2001) and Duque (2001) both supported the same strong association (2014). A satisfied student is an immediate sign of a positive learning experience, according to Marks, Sibley, and Arbaugh (2005), who also discovered that in online learning, the perceived student learning outcome is a reliable indicator of student satisfaction. Perceived learning outcomes were found to contribute to and favorably influence student happiness in the online environment by Ikhsan, Saraswati, Muchardie, and Susilo (2019). However, in this study it was noticed that student self-study makes their satisfaction high on their online learning classes. The study also noticed that the Siam University students are satisfied with their perceived learning during their online classes.

Limitations

This study has several limitations, just like the majority of other studies have. At first, there is less time to do this research. Thus, cannot go very deep studies of research. Secondly, the sample size is limited because only target the Siam university student. With a large number of the sample from different nationality would give a deeper meaning for this research. Lastly, the present research focused only student satisfaction of Siam university students, but another type of variables like system quality, Information quality and online learning outcomes were not considered in this study.

Conclusions and Recommendations

Online learning is one of the methods that currently increasing very fast in this modern world. Students can get access from anywhere in the world. In this study, focused on peer interaction, instructor interaction, student engagement, self-motivation, perceived learning outcomes, perceived self-efficacy, and student satisfaction. This all-variables results come from the data of the Siam university students. In this study found that perceived learning and perceived self-efficacy high influence on student engagement during their online classes. In further study recommend doing research about course structure how much it affect the online classes.

The recommendations for the future studies include large data from other universities and colleges from Thailand to be considered to have the generalization for this population. Further studies recommended to include some other variables like system quality, information quality and online learning outcomes to recognize the university students' online study. The comparison of onsite learning, and online learning on university students can also be recommended for future studies.

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