



International Journal of Engineering, Business and Enterprise Applications (IJEBA)

www.iasir.net

Student Acceptance of Web-based Learning for Universities in Thailand

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Abstract: According to the revolution of the information technology that has been changing quickly, this paper is to study student acceptance of web-based learning for universities in Thailand. Population in this study is bachelor's students selected from Faculty of Science and Technology in 10 universities with plenty of usages of web-based learning and have offered web-based learning system more than 1 year. Quantitative methods are employed and UTAUT theory is applied as technology acceptance model. Research findings are as follows: performance expectancy, effort expectancy, social influence, facilitating conditions and behavioral intention to use have relationship to usage behaviour with a model fit and regression weight significantly supporting hypotheses ($p < 0.05$).

Keywords: Web-based learning/UTAUT/SEM/Learning/Universities in Thailand

I. Introduction

According to the revolution of the information technology that has been changing quickly ([1],[8]), in Thailand, web-based learning has widely used for examples new staff training in the organization, knowledge sharing in community and student learning in university. Although, web-based learning is widely used in Thailand [7], National Science and Technology Development Agency reported that the percentage of visiting the education website in year 2010 still have a little quantity with 8.2% of all internet activities undertaken by individuals in Thailand [5]. The purpose of this study are 1) to determine the four influential factors and one moderator, namely, performance expectancy, effort expectancy, social influence, facilitating conditions, university policies, and how these factors influence usage behavior and behavioral intention to use web-based learning system, 2) to establish web-based learning adoption models, and 3) how to increase the usage of web-based learning systems.

II. Literature review

There are many theories or models of individual acceptance and technology adoption. The 8 popular theories or models are the Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Innovation Diffusion Theory (IDT), Model of PC Utilization (MPCU), Social Cognitive Theory (SCT), Motivational Model (MM), and Combined TAM and TPB (C-TAM-TPB). Although each of these models have their strength, their abilities are limited and can only achieve in describe approximately 30-40% of the predictable in user behavior. In 2003 Venkatesh et al. presented the Unified Theory of Acceptance and Use of Technology (UTAUT) which consists of eight perspectives in the field of technology acceptance research. Venkatesh shown that 3 direct factors of behavioral intention to use a technology are performance expectancy, effort expectancy and social influence and 2 direct factors of technology use are behavioral intention and facilitating conditions and 4 moderators are gender, age, experience and voluntariness may have effect to the factors on behavioral intention and / or use behavior. It has achieved in describing about 60-70% of the predictable in user behavior.([9],[10])

III. Problem Statement

The low usage of web-based learning in Thailand could be caused by several reasons. First of all, the users' attitude toward web-based learning, users would prefer to participate with one another in traditional classroom environment rather than learning in web-based learning which left them feeling isolated. Secondly, the aspect of social influence on the students, where the users have no one to influence them or giving them advise on the advantage of using web-based learning. Thirdly, performance expectancy of individual that believes the system will help him or her achieving better learning performance. Next, the level of effort required to use the system. National Statistical Office Ministry of Information and Communication Technology stated that in year 2013 the proportion of households with the Internet connection is 23.5%. Therefore, student should spend more time and efforts to learn how use the system effectively. Finally, the quality and availability of networking facility, which provided by the universities to support their students to use the web-based learning systems, may not be sufficient for students to make uncomplicated connection to the system.

IV. Results and Discussions

The result of demographic data of respondent consists of four parts. Firstly, the proportion of responded was same between female and male (50.0%). Secondly, the majority of web-based learning responsible was the ages less

than or equal to 19 years old (37.3%) and the ages more than or equal to 23 years old (34%). Thirdly, the majority has experience less than 1 year in using web-based learning (37.5%) and the experience more than 5 years (33.8%). Finally, the majority frequency of using web-based learning was between 3 to 5 times per week (33.8%) and using web-based learning more than 5 years (32.3%).

Respondents find the web-based learning useful was Strongly Agree Level(mean=4.51) with an S.D. of 0.664, respondents accomplish tasks more quickly when using web-based learning was Strongly Agree Level (mean=4.45) with an S.D. of 0.761, respondents using web-based learning for increases productivity was Strongly Agree Level (mean=4.39) with an S.D. of 0.764, and respondents using web-based learning for increase chances of getting a score was Strongly Agree Level (mean=4.55) with an S.D. of 0.639.

Respondents think that web-based learning would be clear and understandable was Strongly Agree Level (mean=4.73) with an S.D. of 0.491, easy to become skillful was Strongly Agree Level (mean=4.67) with an S.D. of 0.537, web-based learning easy to use was Strongly Agree Level (mean=4.75) with an S.D. of 0.457, and operate the web-based learning is easy also was Strongly Agree Level (mean=4.67) with an S.D. of 0.511.

People who influence their behavior think that they should use was Strongly Agree Level(mean=4.63) with an S.D. of 0.678, people who are important to them think that they should use was Strongly Agree Level (mean=4.37) with an S.D. of 0.612, the senior management of the university has been helpful was Strongly Agree Level (mean=4.37) with an S.D. of 0.612, and the university has supported also was Strongly Agree Level (mean=4.42) with an S.D. of 0.587.

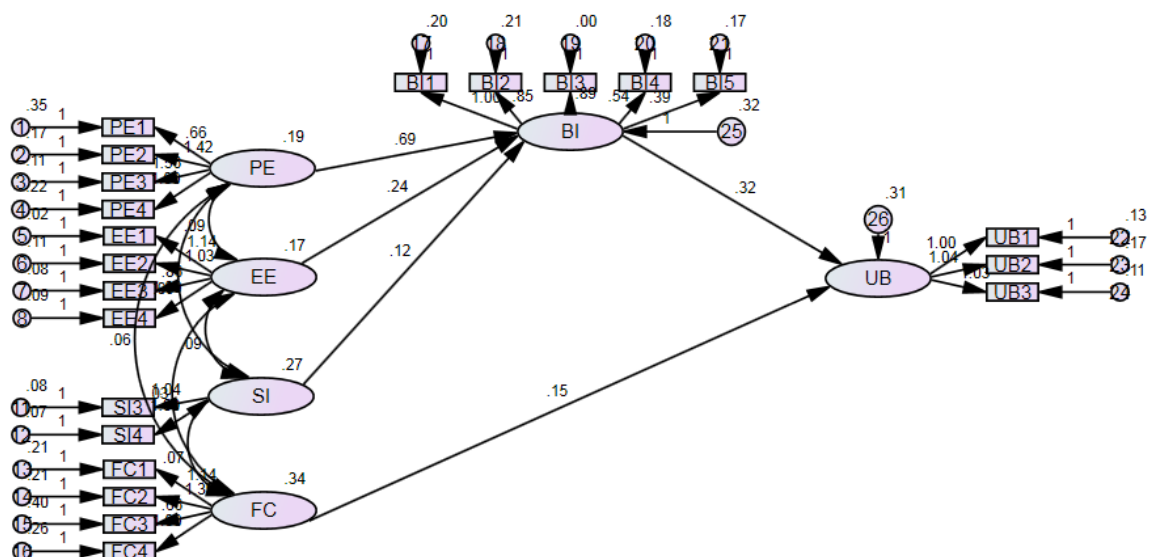
Respondents have the resources necessary to use was Agree Level(mean=4.19) with an S.D. of 0.808, respondents have the knowledge necessary to use was Agree Level (mean=3.97) with an S.D. of 0.931, the web-based learning is not compatible with other systems was Agree Level (mean=4.09) with an S.D. of 0.741, and a specific person or group is available for assistance with web-based learning difficulties also was Agree Level (mean=4.07) with an S.D. of 0.777.

Respondents intend to use the web-based learning in the next 6 months was Strongly Agree Level(mean=4.55) with an S.D. of 0.607, respondents predict they would use the web-based learning in the next 6 months was Strongly Agree Level (mean=4.32) with an S.D. of 0.747, respondents plan to use the web-based learning in the next 6 months was Strongly Agree Level (mean=4.42) with an S.D. of 0.612, assuming respondents had access to the web-based learning, they intend to use it was Strongly Agree Level (mean=4.23) with an S.D. of 0.571, and given that respondents had access to the web-based learning, they predict that they would use it also was Agree Level (mean=4.16) with an S.D. of 0.492.

Respondents do not evaluate costs and benefits of using the web-based learning before every use was Strongly Agree Level (mean=4.35) with an S.D. of 0.710, respondents carefully think about using the web-based learning before every use was Agree Level (mean=3.90) with an S.D. of 0.765, and respondents use of the web-based learning is automatic was Strongly Agree Level (mean=4.22) with an S.D. of 0.712.

This study using Structural Equation Model for data analysis that requires all variables should be normal distribution, measured from skewness and kurtosis, and observe variables should have reliability; the Cronbach's alpha value above 0.7 is a criterion for accepted reliability.

Figure 1: SEM research model



The result of model fit testing showed as follow: Chi-Square=352.843, df=177, p-value= .000, GFI=0.928, AGFI=0.897, RMSR=0.027, RMSEA= 0.050 (PCLOSE=1.00), NFI=0.940, CFI=0.969 and Hoelter=237 (0.01)

Table 11: Standardized regression weights for model

Estimate					P				
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BI	<---	PE	0.440	***	FC3	<---	FC	0.522	***
BI	<---	EE	0.145	***	FC2	<---	FC	0.871	***
BI	<---	SI	0.089	*	FC1	<---	FC	0.821	***
UB	<---	FC	0.140	**	SI4	<---	SI	0.893	
UB	<---	BI	0.367	***	SI3	<---	SI	0.886	***
PE4	<---	PE	0.688		BI1	<---	BI	1.142	
PE3	<---	PE	0.902	***	BI2	<---	BI	0.786	***
PE2	<---	PE	0.837	***	BI3	<---	BI	1.005	***
PE1	<---	PE	0.438	***	BI4	<---	BI	0.663	***
EE4	<---	EE	0.811		UB1	<---	UB	0.858	
EE3	<---	EE	0.780	***	UB2	<---	UB	0.834	***
EE2	<---	EE	0.791	***	UB3	<---	UB	0.881	***
EE1	<---	EE	0.950	***	BI5	<---	BI	0.549	***
FC4	<---	FC	0.749		UB1	<---	UB	0.858	

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

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

***. Correlation is significant at the 0.001 level (2-tailed).

The discussion of the usage behavior on web-based learning for universities in Thailand is as followings:

The performance expectancy found that the agreement is at strongly agreed. The respondents will have intention to use web-based learning when the web-based learning can increase their chances of getting a score; web-based learning is useful and helps them to do their tasks more quickly.

The effort expectancy found that the agreement is at strongly agreed. The respondents will use web-based learning when function on web-based learning has easy to use, define to be clear and understandable, and ease to operate it.

The social influence found that the agreement is at strongly agreed. The social influences have effect to usage on web-based learning of respondents only that they have supported from the university.

The facilitating conditions found that the agreement is at agreed. University should provide facilities necessary for the learning of students in a learning system on the Web. Web-based learning system should be able to transfer data via the learning system and other. Universities should have a helper or a team or help menus are available on the web when learning difficulties occur.

The behavioral intention found that the agreement is at strongly agreed. Behaviors of the students are likely to use the system to learn more in the future.

The usage behavior found that the agreement is at strongly agreed. Students did not evaluate the benefits of using a web-based learning before every use. The student's usage of web-based learning system is automated and students thinking carefully about the use of system before using the system.

V. Conclusion

The student's adoption of web-based learning will be increase because their expectations that the web-based learning system to be able to help him to get a high score in examination. University facilities are enough to support them for using of the web-based learning system. Web-based learning system must be user friendly and free effort and should have a helper or a team or help menus are available on the web when learning difficulties occur.

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