

Students' Perceptions of E-Learning: the Case of ACU Certificate Course

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Abstract - This paper is an action research paper which aims to investigate students' perceptions of ACU e-learning, developed by ASEAN Cyber University Project. The e-learning is targeted to be used within ASEAN region to support higher education by exploiting the power of e-learning. The paper focuses on actual online learning experiences of students at Lampang Rajabhat University in Thailand. Technology Acceptance Model (TAM) was used as a supportive theory to study students' perceptions. The research shows that the students had positive perceptions and attitudes towards ACU e-learning. And, the two internal factors as appeared in TAM, perceived usefulness and perceived ease of use, could influence students' attitudes towards the use of e-learning. The paper contributes in that it provides evidences which can be applied to institutions with similar context where e-learning is supposed to be used for the first time, but the majority of students are not familiar with this technology.

Keywords - E-Learning, Students' Perceptions, Technology Acceptance Model, ACU Project

I. INTRODUCTION

Recently, learning and teaching in higher education has been transformed due to the rapid development of information and communication technologies (ICTs). E-learning is an example that has been extensively used in universities and institutions all over the world. E-learning has transformed the way people learn as learning can happen anywhere at any time on any devices. Even though, there is a new revolution of online learning, called

MOOC (massive open online course), still, it has been considered as being rooted from e-learning as it is a combination of online learning and open educational resources [1]. The term e-learning has been widely used in education; nevertheless, the definition of e-learning has not come to an agreement. Welsh et al. [2] define e-learning as the use of computer network technology, primarily over an intranet, to deliver information and instruction to individuals which are learners in educational setting. Hrastinski [3] terms e-learning as learning and teaching online through network technologies and it is arguably one of the most powerful responses to the growing need for education. Engelbrecht [4] views e-learning as the delivery of teaching materials via electronic media such as internet, intranets, extranets, satellite broadcast, audio/video tape, interactive TV, and cd-rom. Other researchers such as Kelly and Bauer [5] view e-learning as a web-based learning which utilizes web-based communication, collaboration, knowledge transfer, and training to add values to the individuals and organizations. Although, e-learning is generally accepted by most researchers in the field that it can be delivered by any electronic media, web technologies seem to have made e-learning more broadly accepted by academic institutions as well as business organizations [6-7].

E-learning has gained popularity in recent years, especially, in ASEAN region. An obvious example is the establishment of ASEAN cyber university (ACU) project. The idea of establishing this project was first initiated in June 2009, at the 20th Anniversary of ASEAN – the Republic of Korea [8]. The main aim of the project is to reinforce higher

education in ASEAN region by trying to utilize the power of e-learning. At the beginning, the ACU project had been implemented by the South Korean Ministry of Education and Seoul Cyber University (SCU) before it was transferred to be undertaken by Korea Education and Research Information Service [9]. The project is ongoing, and offers certain amount of online courses effectively using its own LMS. Lampang Rajabhat University (LPRU) has established a collaboration with SCU in 2014, and has been regarded as a participating institute since then. Part of the collaboration is to promote online courses among students in order to enhance their international higher education opportunities by means of e-learning. Thus, ACU certificate program was operated at LPRU in the first semester of 2015, and, students' perceptions of e-learning were investigated to see how students perceived the usefulness of ACU e-learning.

II. LITERATURE REVIEW

A number of research have been conducted to study students' perceptions towards the use of e-learning in teaching and learning at the university level. For example, Lee et al. [10] examined learners' acceptance of e-learning services from undergraduate students in South Korea by considering three service quality constructs (instructor characteristics, teaching materials, and design of learning contents) and two belief constructs (perceived usefulness and perceived ease of use). The researchers also investigated the relationship between the two belief constructs and intention to use e-learning. Additionally, they analyzed the relationship between flow construct (playfulness) and the intention to use e-learning. Research results showed that instructor characteristics and teaching materials were positively related to perceived usefulness whereas design of e-learning contents was positively correlated with perceived ease of use. These results indicated that as the service quality of e-learning improved, the students tended to be more positive towards e-learning. Keller and Cernerud [11] examined students' perceptions of e-learning by taking students at Jönköping

university in Sweden as research participants. Results of the study showed that the strategy of implementing e-learning played an important role for students' perception of the new technology. Also, the use and implementation strategy at the university seemed to influence students' perceptions. However, students previously used to computers were not necessarily to be expected to be more positive to e-learning than other students. Song et al. [12] studied about students' perceptions of useful and challenging characteristics of online learning. The participants were graduate students at a research university in the south of USA. Research results indicated that most students agreed that course design, learner motivation, time management, and comfortableness with online technologies had an impact on the success of online learning. On the contrary, technical problems, a lack of sense of community, time constraints, and the difficulty in understanding the objectives of online learning courses were considered to be challenges for online learning. Almarabeh [13] examined students' perceptions of e-learning at the University of Jordan based on technology acceptance model (TAM). Results of the study demonstrated that the students were highly qualified and accepted to use the e-learning system in more advance manner. Eldeeb [14] aimed to study learners' perceptions to e-learning from undergraduate students in Dubai medical college (DMC) and Dubai pharmacy college (DPC). The study reported positive perception and attitude of students towards e-learning and learning management system (LMS). Also, the availability, flexibility, and convenience of e-learning were regarded as features and areas of strengths. Nevertheless, technical problems of e-learning were considered to be a major challenge and have a crucial impact on the successful and enjoyable e-learning experience. Liu et al. [15] believed that using just one theory or model, such as the technology acceptance model (TAM), was not sufficient for studying about intention to use e-learning system. Rather, a combination of theories should be integrated. Hence, the researchers presented an integrated theoretical framework to study learners' acceptance of streaming media for e-learning. This integrated theoretical framework

consisted of: the technology acceptance model, flow theory, and media richness theory. Results from this study confirmed the influence of media richness as an external variable on learners' intention to use e-learning technology. Course materials that use rich media can promote higher learners' acceptance through stimulating a higher perceived usefulness and concentration. Ong and Lai [16] explored gender differences in e-learning perceptions of employees from six international companies at the Hsin-Chu Science-based Industrial Park in Taiwan. A survey of 67 female and 89 male indicated that men's rating of computer self-efficacy, perceived usefulness, perceived ease-of-use, and behavioral intention to use e-learning were higher than women's. The findings suggested that researchers in the field of e-learning should take into account factors of gender in the design, development, and testing of e-learning theories. Rinaldi [17] conducted a study about perception of students towards e-learning in a private university in Indonesia.

Three research questions were set for investigation: 1) what were benefits and drawbacks of the e-learning?, 2) what did students like or dislike about the e-learning?, and 3) what other features should be included in the e-learning?

Regarding the benefits and drawbacks of the e-learning, three main benefits were identified: 1) availability and accessibility of course materials, 2) paperless materials, and 3) environmental friendly.

Three drawbacks were also reported: 1) requirement to have computer with internet access, 2) health issues, and 3) technical issues.

As for what students like and dislike about the e-learning, the availability and accessibility of the course were reported to be liked by the majority; however, the minority reported not to frequently receive notification from the e-learning. Most students preferred to have resources available online and appreciated to have all course materials in one place. Communication tools, such as discussion

forums and chats, were reported to be of use. Though, some students got struggle when using them. Concerning the issue of other features that should be included into the e-learning, the students suggested that social media, such as Facebook and Twitter could be integrated, as they had become more familiar with using it and it made learning less boring and more fun. The researcher concluded that even though the students perceived the use of e-learning as being useful, they viewed it as a supplement to classroom learning. And, this required more efforts to push e-learning to be a complete replacement for traditional education.

From the literature, it can be said that when e-learning is implemented in teaching and learning process for the first time, it is compulsory to investigate the perceptions of students towards the use of it in an attempt to see if this technology will be acceptable. Various theories of technology acceptance can be used to study students' perceptions and one of them is TAM introduced by Davis [18]. TAM explains computer-usage behavior in which perceived usefulness and perceived ease-of-use are among the two major factors that determine acceptance. TAM has been the influential model for understanding the acceptance of information technology. Also, there is extensive empirical support for the use of it, e.g. Venkatesh, et al. [19], Porter and Donthu [20], Alharbi and Drew [21].

Due to the fact that ACU online courses have been officially operated at LPRU, it is essential to research about the e-learning perceptions of students based on their online learning experiences because this will have positive effects for the project in a long run. The more the students perceive the value of ACU e-learning and accept the use of it, the more they intend to use the e-learning for their own sake. And, this will lead to lifelong learning. As a result, this paper focuses on the study of LPRU student's perceptions and attitudes towards ACU e-learning.

According to the data, it can be said that students perceived the value of ACU e-learning as being helpful in developing their learning skills such as computer and internet usage skill, self-regulated learning skill, information access skill, and so on. As for the acceptance of ACU e-learning, students reported to perceive a high level of usefulness and felt the e-learning was easy to use. Also, the e-learning provided an engaging learning experience

which had an effect on their intention in continuously using it. In addition, the e-learning helped inspire them to learn via ICT.

B. Students' Attitudes towards ACU E-Learning

As for the analysis of students' attitudes towards ACU e-learning, results are shown in Table II.

**TABLE II
ATTITUDES TOWARDS ACU E-LEARNING**

Items	μ	σ	Value
Content			
1. Helps achieve goals in learning	3.8	0.7	High
2. Helps understand content	3.7	0.7	High
3. Helps memorize content	3.7	0.7	High
4. Useful Information notification system	3.9	0.8	High
5. Given tasks are useful for learning content.	4.1	0.7	High
6. Given tasks are crucial for skills development.	4.0	0.8	High
7. Promote student-teacher interaction	3.6	0.9	High
8. Promote interactions among learners	3.7	0.9	High
9. Decreased cost of learning	4.1	0.8	High
10. Daily life applications	3.9	0.7	High
Content Structure			
11. Covers all learning objectives	4.0	0.7	High
12. Appropriately structured content	4.0	0.7	High
13. Suitable content	3.9	0.7	High
14 Interesting content presentation	3.9	1.0	High
15. Useful examples	4.0	0.7	High
16. Useful exercises	3.9	0.8	High
17. Suitable links to other resources	3.9	0.8	High
Design			
18. Beautiful design	4.1	0.7	High
19. Creative design	4.1	0.9	High
20. High quality graphics	3.9	0.9	High
21. Easy-to-use design	4.0	0.8	High
22. Learning support tools e.g. dictionary, glossary	3.9	0.8	High
Overall Aspect			
23. Satisfaction towards ACU e-learning	4.0	0.7	High

From the results, it can be concluded that students felt highly satisfied with ACU e-learning. The students agreed that the e-learning could help reduce the cost of learning. The tasks given on the e-learning also helped with their learning process and were crucial for the development of their learning skills. The subject content appeared on the e-learning was structured appropriately and the delivery of content through video, animation, and text was interesting. As for the design of e-learning, the students found out that the interface was beautiful, creative, and easy-to-use.

VII. DISCUSSIONS

The aims of this research were to study about students' perceptions of ACU e-learning based on their online learning experiences including students' attitudes towards the e-learning. According to the literature (e.g. [10, 11, 13, 14, 17]) when the information technology (IT) is implemented for the first time, it is essential to investigate users' acceptance of the new technology and understand its usage behavior. Although a number of research have been conducted with regards to students' perceptions of e-learning, results may be different from

region to region. For example, students' perceptions of e-learning in European countries may be different from those in Asian countries. Even among Asian countries, the perceptions may be varied from country to country. For instance, the perceptions of students towards e-learning in Southeast Asian countries may be different from those in Japan or South Korea.

Technology Acceptance Model (TAM) proposes two major internal factors that influence users' attitudes towards the use of IT which are perceived usefulness (PU) and perceived ease of use (PEU) [18-19]. In this study, PU and PEU were also examined along with other aspects such as engagement, intention, and inspiration in e-learning usage. It was found out that the students perceived the usefulness and ease of use of ACU e-learning at a high level. Furthermore, the students reported that the e-learning was engaging and inspiring to use. And, this is congruent with the literature such as [22] in which the researchers attempted to investigate both extrinsic (perceived usefulness and ease of use) and intrinsic (perceived enjoyment) motivators to explain students' intention to use e-learning services.

Considering the aspect of students' attitudes towards ACU e-learning, it is evident that the students had positive feelings with the e-learning since the Mean score for each item under affective attitude in Table II is high. This confirms the result of research conducted by Davis [18] that the two internal factors, PU and PEU, could influence users' attitudes towards the use of IT. Hence, it can be said that this research make contributions to existing knowledge in two aspects. Firstly, it provides evidences that when e-learning is planned to be used for the first time, especially in a college where the majority of students are not familiar with this technology, it is compulsory to initially start with the exploration of students' perceptions. And, this can be applied to institutions or colleges with similar context e.g. Rajabhat Universities in Thailand, teachers colleges in Asian countries, etc. Secondly, it is evident that the two internal factors, PU and

PEU, can influence students' attitudes towards the use of e-learning. And, this will remind the instructional designer and developer to keep in mind that it is important to design and develop an e-learning in such a way that it is easy to use and users can perceive its usefulness promptly.

VIII. CONCLUSIONS

This study not only reports positive students' perceptions and attitudes towards ACU e-learning, but also confirms that TAM can be employed to study students' acceptance of e-learning. Also, the two key factors appeared in TAM, perceived usefulness and perceived ease-of-use, can influence the attitudes of students towards ACU e-learning. However, a strong quantitative research should be conducted to investigate the use of TAM as a theoretical base to understand students' perceptions towards ACU e-learning as the main aims of this study were to study the perceptions of LPRU students and their attitudes towards ACU e-learning at the initial stage. And, this can be applied to institutions or colleges with similar context to that of LPRU which plan to operate ACU e-learning at their sites.

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(Arranged in the order of citation in the same fashion as the case of Footnotes.)

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