

Expectations and Self-Regulated Learning Behaviors of Thai MOOC Learners

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ABSTRACT

Massive Open Online Course (MOOC), widely used in the global education field since 2008, provides opportunities for everyone regardless of age, gender, and education level to take courses any time from any location in the world by self-regulated learning and encourages lifelong learning behavior. In Thailand, MOOC was officially used at the national level in 2016 in the Thai MOOC project, in which E-Commerce Website Development for Online Business is one of the 239 courses offered during the initial period. This research studied the expectations and self-regulated learning behaviors of the participants. The data were collected in 3 phases: pre-learning, learning, and post-learning. Analytic questionnaires were utilized along with learners' engagement and performance data. The results can be concluded in 3 aspects: 1) The learners expected the course to improve their performance at work, which corresponds with their satisfaction in the instructor's help in understanding the lessons, 2) the learners' expected attendance behavior was different from their actual behavior, which helped most of them understand the online learning environment better, and 3) the learners' performance, measured from the tests, was 93.3%. Most learners planned to take more Thai MOOC courses.

CCS Concepts

• Applied computing → Education → E-learning

Keywords

Thai MOOC, self-regulated learning, learning behavior

1. INTRODUCTION

Digital technologies play an important role in 21st-century education as stated in the UNESCO report [1]. Educational systems have replaced standard classrooms with online environment. The collaborative space of online systems can extend across various technologies and platforms. Massive Open Online Course (MOOC) system becomes the simplest method to

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ICBIM'18, September 20–22, 2018, Barcelona, Spain.

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ACM ISBN 978-1-4503-6545-1/18/09 ...\$15.00.

DOI: <http://doi.org/10.1145/3278252.3278271>

enhance people's knowledge, as it provides access to the desired information at a learning level. MOOC platforms started in 2008 in the USA and Canada. MOOCs are regarded as online courses designed for a large population scale accessible anytime and anywhere as long as Internet connection is available [2]. Moreover, MOOCs are created to support university programs, academic scholarships, community outreach, professional development, and corporate training applications [3].

In Thailand, MOOCs are a new platform in the educational system. The Thai MOOC project was initiated in August 2016 by Thailand Cyber University (TCU) with support from the Office of the Higher Education Commission. The objective of this project is to provide opportunities for online education and lifelong learning. There are no entry qualifications required for learners to access the courses. The first phase of the TCU project consists of 239 courses from 9 higher education networks in Thailand with more than 40 universities [4]. A number of Thai MOOC courses such as IT for Business, IT for Education, Media Literacy were further launched in 2017.

E-Commerce Website Development for Online Business is one of the 239 courses in Thai MOOC project's first phase. This course is created by lecturers from Suranaree University of Technology and Nakhon Ratchasima Rajabhat University which belongs to the lower north-eastern region higher education network. The course structure is divided into 2 parts, the first part contains lectures, such as e-commerce theories and the principles of web designing, and the second part involves computer programming laboratory, such as web development tools. The course was available on the Thai MOOC website at www.thaimooc.org from April 2017 to August 2017. This MOOC offers an opportunity for learners to access online learning content and activities. Learners have to manage their time for studying a content by themselves also known as self-regulated learning (SRL).

This research analyzes self-regulated learning behaviors of learners in the E-Commerce Website Development for Online Business course by using learning questionnaires and Thai MOOC insights. Moreover, learners' expectation and satisfaction analysis have also been accomplished.

2. LITERATURE REVIEW

MOOCs are a widespread distance learning environment, providing open content that any individual anywhere in the world

can take courses independently [5]. MOOCs have been developing completely since 2008, with the explicit objective not only to increase learning opportunities, but also to improve the learning experience [6].

In recent years, many studies were conducted on the MOOC learning platform. A main idea of the literature review is surveying the outstanding MOOC researches for studying a methodology and significant results.

For example, Wong et al. [7] investigated learners' comments on MOOC forums and used a keyword taxonomy approach to analyze a large amount of MOOC forum data in order to identify the types of learning interactions. The results showed that different types of forum interactions had characteristics relevant to particular learning levels, and the amount of higher-level cognitive learning increased as the course progressed.

Hone and El Said [8] reported a survey study of 379 MOOC participants enrolled at a university in Cairo. 32.2% finished an entire course. There was no significant difference in completion rates by gender, level of study or platform. A survey on students' perceptions showed that the MOOC course content was a significant predictor of MOOC learner retention.

Littlejohn et al. [9] surveyed the self-regulated learning in MOOC learners by focusing on how learners' motivations for taking a MOOC influenced their behaviors. The study correlated the narrative descriptions of learners' behaviors with self-reported high and low SRL scores. Learners' motivations and goals were found to shape how they conceptualized the purpose of the MOOC, which in turn affected their perception of the learning process.

Shapiro et al. [10] attempted to perceive why learners took the courses, specifically Introduction to Chemistry or Data Analysis and Statistical Inference, and to identify factors both internal and external to the course setting that impacted engagement and learning. An examination of learners' statements relating to motivations revealed that knowledge, work, convenience, and personal interest were the most common factors. Moreover, lack of time was the foremost reason for learners to opt for an online course.

Chernbumroong, Sureephong, and Puritat [11] studied the learning style and technology utilization patterns of Thai tourism professionals in five-star hotels in Chiang Mai, Thailand in order to design a suitable MOOC. The results showed that smartphones have a dominant role in the technology usage of the tourism professionals. The learning style could be identified as typical for various learning dimensions; visual style, active style, and sequential style. Furthermore, the MOOC should be delivered starting from easy to hard lessons in logical steps to support the learners' comprehension style.

As reviewed above, diverse MOOC researches have been published. Most of them focused on teaching and learning using MOOCs, similar to this research which aims to study the expectations and self-regulated learning behaviors of Thai MOOC learners.

3. THAI MOOC AND OPEN EDX

Thai MOOC is run on Open edX platform. It consists of an open-source software and a learning platform, containing both a Content Management System (CMS) and a Learning Management System (LMS). The Open edX has been adopted by hundreds of academic institutions around the world [12] because of its

flexibility for online learning activities and that it is connected to an active development community. The E-Commerce Website Development for Online Business MOOC uses various learning activities. Below is a detailed list of the learning activities offered in this MOOC:

3.1 Video Lectures

In the first phase of Thai MOOC, TCU requires that video lectures be used in at least 30% of the learning time. Instructors may incorporate multimedia into the video lectures to make them more interesting [13]. There are 73 video lectures from 9 episodes of this course. The average length of the video lectures is 7.53 minutes.

3.2 Problems

Problem solving is an activity that encourages learners to answer questions to measure the knowledge gained from watching a video lecture. The types of problems included multiple choices, checkboxes, drop-down, and text input. This MOOC consists of 26 problem sets and each problem set contains 5 items on average.

3.3 Discussion Forum

Discussion forum is where learners can express their opinions about the lessons. The instructor team will set up discussion issues, such as case studies and open-ended questions. The discussion forum enhances learners' engagement throughout the course with fellow learners as well as the instructor team [14].

3.4 Reading

The Open edX provides a function for instructors to distribute learning materials, such as journals, documents and textbooks. The system allows learners to download and read the learning materials in MOOCs. Reading is suitable for step-by-step content, such as software installation procedures.

4. RESEARCH METHODOLOGY

The E-Commerce Website Development for Online Business course is offered in Thai MOOC for 16 weeks. The learners' data collection process was divided into 3 phases; pre-learning phase, learning phase, and post-learning phase. Figure 1 uses infographic to illustrate the research data.

Pre-learning phase refers to the first period when the learners enrolled in the course. The learners were requested to answer a (non-obligatory) learner's expectation questionnaire.

Learning phase data were collected from the Thai MOOC insights webpage. Weekly learners' engagement and learners' performance data were used for analyzing self-regulated learning behaviors. The course was active for 16 weeks from April 2017 to August 2017.

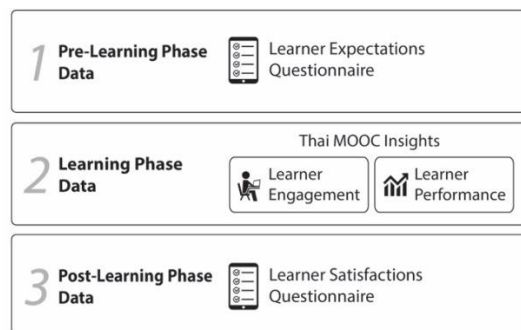


Figure 1. Infographic of the research data

Post-learning was the final data collection phase after the learners completed all the units. The learners were requested to answer a (non-obligatory) learner’s satisfaction questionnaire.

In the analysis, the learners’ expectations were integrated with the Thai MOOC insights, expressed in terms of the learners’ engagement and performance. These data were analyzed by using a Percentage. Moreover, the learner’s satisfaction information was discussed as well in the conclusion stage.

5. DATA AND RESULTS

5.1 Pre-Learning Phase Data

In the pre-learning phase, learners were asked to response a learner’s expectation questionnaire. The questions asked for the basic information of the learners, their study plans and expectations, such as “What are your expectations for a MOOC?”, “How much time (per week) would you dedicate to a MOOC?”, “What do you think are the benefits of online learning?”, “Have you ever learnt with another online system?”. During this phase, 193 datasets were collected from 462 active users. The pre-learning questionnaire evaluation results are shown in Table 1.

Table 1. Pre-learning questionnaire evaluation results

Question	Top 3 Answers		
	1	2	3
What are your expectations for a MOOC?	To improve performance at work (n=109, 18.3%)	To create an online learning experience (n=97, 16.3%)	No cost for learning (n=96, 16.1%)
How much time (per week) would you dedicate to a MOOC?	2 hours (n=92, 48.4%)	More than 3 hours (n=51, 26.8%)	1 hour (n=47, 24.7%)
What day would you use a MOOC?	Saturday (n=146, 15.2%)	Monday (n=143, 14.9%)	Wednesday (n=139, 14.5%)
At what time would you use a MOOC?	Night (n=464, 48.4%)	Evening (n=240, 25.1%)	Afternoon (n=129, 13.5%)
What do you think are the benefits of online learning?	Ability to repeat the lesson at any time (n=162, 31.3%)	Saves travel cost (n=128, 24.8%)	No need to skip work (n=88, 17%)
Have you ever learnt with another online system?	Never (n=171, 90%)	The university’s Content Management System (CMS) (n=6, 3.2%)	Coursera (n=5, 2.6%)

5.2 Learning Phase Data

Learning phase data were assembled from the Thai MOOC insights webpage. The weekly learners’ engagement data consist of statistics for 3 activities: watching videos, solving problems, and discussion participation. The weekly learners’ engagement results are shown in Figure 2.

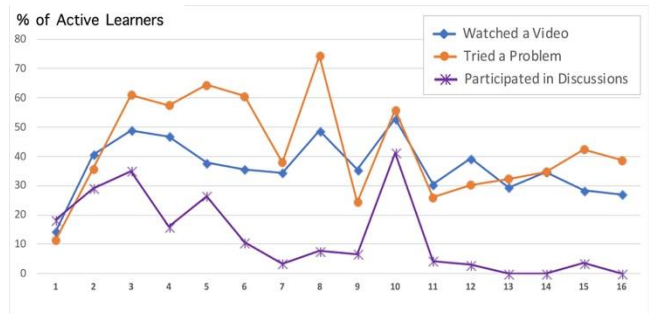


Figure 2. Weekly learners’ engagement results

Figure 2 presents the percentages of active learners’ number in each week. Problem solving was the activity with the greatest participation, especially in week 8, where the number of participants was highest at 74.4%. Watching videos was an activity that learners were also interested in. The results show that the highest participation in the activity was in week 10 at 52.9%. Moreover, the learners appeared to participate in discussion activity during weeks 1 to 6. Then, participation of active learners in this activity dropped to less than 10% until the last week of the course, except in week 10 which saw a participation rate of 41.2%.

In addition, the learners’ performance data were evaluated using the percentages of correct answers in the problem solving activity. All questions in this activity were standardized by instructors who teach e-commerce course. The problems were divided into 9 units. The learners’ performance results are shown in Figure 3.

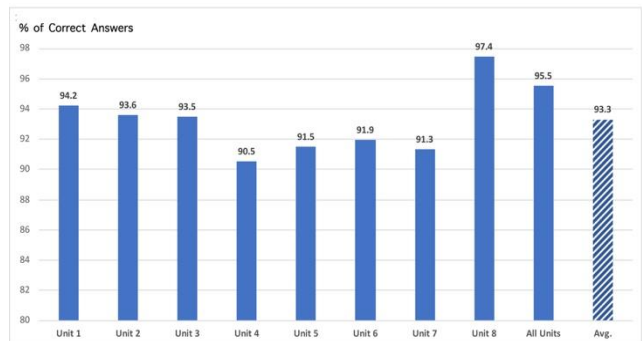


Figure 3. Learners’ performance results

Figure 3 reports the percentage of correct answers in each unit. The overall results show that the learners scored an average of 95.5% in the final unit, in which the questions involved combined knowledge from Units 1 to 8. As for Units 1 to 8, the highest percentages are observed in Unit 8 (97.4%), Unit 1 (94.2%), and Unit 2 (93.6%), respectively. The average score of all units was 93.3%.

5.3 Post-Learning Phase Data

In the post-learning phase, learners were asked to response a learner’s satisfaction questionnaire. The questions were about the satisfaction, actual behaviors, and opinions on this MOOC, such as “How many times a week do you use Thai MOOC?”, “How long do you study in each session?”, “How satisfied are you with the overall course?”, “How satisfied are you with the course components?”, etc. In this phase, 93 datasets were gathered from all active users during the final week. The post-learning questionnaire evaluation results are shown in Table 2.

Table 2. Post-learning questionnaire evaluation results

Question	Top 3 Answers		
	1	2	3
How many times a week do you use Thai MOOC?	1 time per week (49.46%)	2-3 times per week (46.24%)	More than 5 times per week (3.23%)
How long do you study in each session?	Less than 30 minutes (53.76%)	More than 60 minutes (25.81%)	30 – 60 minutes (11.83%)
How satisfied are you with the overall course? (Rating scale)	The duration of this course helped me understand the online learning environment. (24.22%)	I have gained new knowledge from this course. (23.77%)	I am confident that online learning is not too difficult for me. (23.29%)
How satisfied are you with the course components? (Rating scale)	The instructor's communication helped me understand the content. (23.28%)	The quizzes and feedback during learning helped me understand the content. (23.22%)	Answering the questions in the instructor's forums stimulates the learning. (22.32%)
Do you want to take more courses by Thai MOOC?	Yes (82.80%)	No (8.6%) I am not sure (8.6%)	-
Would you recommend this MOOC to others?	Yes (97.85%)	No (1.08%) I am not sure (1.08%)	-

6. CONCLUSIONS

The objective of this research is to analyze the expectations and self-regulated learning behaviors of Thai MOOC learners. The analysis results presented in the previous sections reveal Thai MOOC learners' expectations, performance and satisfaction. The results can be discussed and concluded into three aspects as follows:

6.1 Learners' Expectations

Prior to the course, the learners expected to apply the knowledge to improve their performance at work. The post-learning questionnaire results show that the learners are satisfied with the instructor's teaching and communication style which helped them understand the content. This corresponds with the learners' engagement in the problem solving activity. The activity, which encouraged the learners to use analytical thinking skills on what they had learned, had the highest participation rate.

6.2 Learning Behavior

Most learners expected to spend 2 hours per week learning, but actually spent no more than 30 minutes per week. Although the expected and actual behaviors differed, it could be because the

majority of the learners had never taken any online course, so they were not familiar with the high flexibility of online learning environment. In addition, according to the pre-learning questionnaire, most learners would come to learn at night, which could result in shorter durations. This corresponds with the fact that the duration of the course helped them understand the online learning environment, which was also the factor that satisfied most learners.

6.3 Learners' Performance and Satisfaction

The learners in this group appeared to focus on the learning outcome. According to the test results from all units, the average learners' performance score was 93.3%. Moreover, most learners planned to take other Thai MOOC courses. And over 90% of them stated that they would recommend Thai MOOC to other people, possibly because Thai MOOC offers a variety of courses and learning styles, which serves the needs of learners who like to seek knowledge and learn by themselves. In addition, learners who participate in designated activities and pass the tests will also receive certificates.

The current research results can suggest instructors to reduce the learning time in each unit for consistency with the future learners' behavior. However, the E-Commerce Website Development for Online Business course was operated by instructor-paced, which means the courses progress at the pace that the course instructors sets. Instructors can configure release dates for course content and due dates for assignments. In the future work, the self-paced will be studied, which is courses do not have release dates for course content or due dates for assignments. Learners can complete course material at any time before the course end date.

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