

# Design and Development of Constructivism Mobile-Based Learning Environment on English Subject for Junior High School students in Thailand.

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**Abstract:** The purpose of this study was to design and develop of Constructivism Mobile-Based Learning Environment on English subject for junior high school students, with the technological enhancements of online learning is learning management system (LMS) that responds to constructive learning, called SCOCIALClassnet (Constructivism Learning Environment Management System). The target group was comprised of 31 students. In phase1 was found that the pretest of Soktae school was  $\bar{X} = 4.5$ , S.D. = 1.27 and Nongsiangsui – Nonsa-at school was  $\bar{X} = 4.43$ , S.D. = 1.77 and two schools have T-Test that is -0.07754.

**Keywords:** Mobile-Based Learning Environment, Mobile-Learning, English Learning, Constructivism Learning Environment, Learning Management System

## 1. Introduction

In recent years, Thailand has tried to reform education by all. To increase and competitive with other countries. When the test results in 2016 showed that English language students in Grade 3, candidates for all 637,406 people, the test of English with a mean score of 31.80 points (MP TOT, 2016) and the outcomes. the above shows that the English language skills of students in the third level is lower than the target value, which is at 55 percent and considering the results of tests of English, Soktae school. Showed a mean score of 29.08 points, lower than the national average at 2.72 (National Institute of Educational Testing Service, 2016).

In addition to teaching the textbook is important, the media and education are also very important. The current technologies have a role in life and was very active in teaching various subjects in schools and educational institutions. Current and mobile electronic devices such as cell phones, smart phones, iPads and other important and essential communications. Whether on social contact or it can be easier to find information on your mobile phone. The researchers believe that. Mobile electronic devices as a medium of instruction stimulates another form. Appeal Added incentive and improve student learning in the Generation Z (or Gen Z) mobile phones. Both the smart phones and tablet is a 33 organs of Gen Z have many features including call and chat and take pictures, listen to music, play games, watch video, etc. to meet the digital life cycle.

In addition to the mobile application or mobile now. The study-based learning management system learning environment based on constructivist Whistler. (Constructivism Learning Environment Management System) is a type of learning that can be considered as social media, online environment where new forms of learning along the Connecticut Post Stoughton activity. A framework designed to: 1) the stimulation of intelligence and creativity, 2) support intellectual 3) supporting the creation of knowledge and creativity, and 4) to help build creativity. By using the site as a channel of communication that is the link between a person's social networks via the

Internet. Including associated services such as Facebook, Google, and YouTube featured on the app's functionality for many applications. Enabling Internet users to publish content easily. Whether in the form of text, images, audio and more to others with convenience and ease. Including the development of web 3.0 is to focus on the role of the learner as the creator and inventor of knowledge sharing. Social networks and social benefits play a role in learning. (Issara, 2016)

Thus, to develop a model curriculum for use as a mobile base with the environmental management system of learning based on constructivist Whistler. The research conducted to find ways to improve teaching and learning of English and the ability to use English. That will result in successful students can learn and understand English to be applied and work more efficiently. And is on part with international language skills.

## **2. Literature review**

### *2.1 Mobile-based learning environment*

Mobile-based learning environment is a simple studying method that take place with assistance of cell phones, otherwise mobile computing's connection (the utilization of small feature, handy, and the wireless computing and device of communication) and E-learning (learning facilitated and supports trough the employment of information communication technology). The teacher uses mobile learning when the teacher want to encourage students to search the information and the teacher will give the mission and stimulate them to do it. The teacher things that learning using mobile in teaching and learning will encourage students more than teaching by the teacher only.

### *2.2 Constructivism Learning Environment management system*

The Constructivism learning environment (CLEs) theory are characterized as hands-on learning environment that strive to imitate real-life contexts, (Jonassen, 1999). The CLE has a social learning: Learning is to construct knowledge individually and/or socially based on learners' interpretations of experiences in the world. Instruction is to engaging learners in meaning making (Kanjung, Chaijaroen, and Samat, C., 2015) The CLE is the basis for designing and developing Learning management system (LMS) called SCOCIALClassnet which key elements of social class are problem base & learning task, knowledge bank & related, collaboration & cognitive tools and coaching & social support in the CLEs.

## **3. Method**

### *3.1 Constructivism Mobile-Based Learning Environment Design*

#### *3.1.1 Activating cognitive Structure and reading comprehension*

To stimulate the ability to learn about Past Simple Tense, problem base is an important component of leaning interaction. Learning is designed to focus on issues that define the contexts and the missions of learning. According the conceptual framework contents for Past Simple Tense consist of 3 contents 1) structure 2) words that appear in Past Simple Tense 3) Types of Verbs in Past Simple Tense as shown in Figure 1.

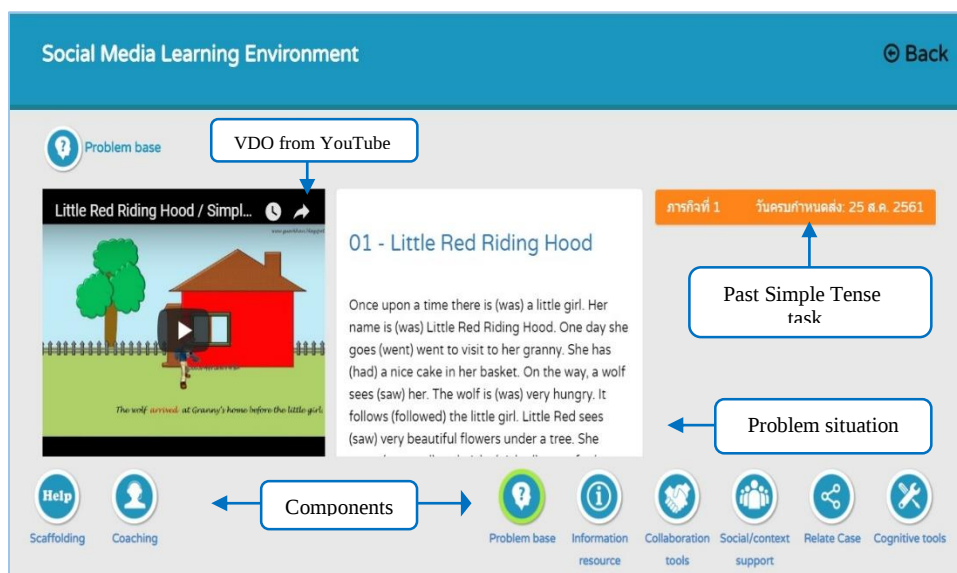


Figure 1. Screen design of Problem base.

### 3.1.2 Supporting Cognitive Equilibrium and

The components of Supporting Cognitive Equilibrium and reading comprehension are

- 1) Information resource was to support discover the answer to solve the problem by discovered knowledge from various sources and can help students understanding easily which base on SOI model (Mayer, 1996); selecting, organization, integrating designing of this component.
- 2) Cognitive tools were to support their mission to solve complex problems. They are tools to expand the concept, design tools, intellectual basis of the information processing theory (Klausmeier, 1985) and OLEs (Hannafin,1999).
- 3) Collaboration tools were support to encourage students to share experiences between students, teachers and experts for expanded view of thinking. Its helped adjust misunderstanding that occurred while learning, based on Social Constructivist of Vygotsky (1978) theory.
- 4) Related Case was support to encourages students personalize the experience to close the case and to expand the view to change the perception as shown in Figure 2.



Figure 2. Screen design of Information Resource (Left) and design of Cognitive tools (Right).

### 3.2 Pilot study

### 3.2.1 Participant

- Experts including 1) Content expert was teacher who was teaching in this subject
- 2) Learning media expert and 3) Learning environmental design expert.
- The target group of 31 students in grades 1-3 at Soktae school and Nongsiangsui – Nonsa-at school.

### 3.2.2 Data Collection and data analysis

In this study, the researcher conducted experiments and collect data for the design and development of the environmental management system of learning based on constructivist. This includes a review of the lessons learned from the environmental management system of learning based on constructivist Whistler. To promote motivation to learn. For classes that are used as mobile bases. And quantitative data points are tested before and after learning of the group of 31 people from the quiz after learning states. English finished the data collection done in the first semester of the 2560 academic year second semester of academic year 2561 first place in the experiment is Soktae school and Nongsiangsui – Nonsa-at school.

- Take the poll to take place after the lessons learned by the environmental management system of learning based on constructivist.
- Make sure Achievement states. The multiple-choice quiz, analysis of the data in this town. Quantitative Data Analysis and qualitative the researcher will present the study data analysis parameters.
- performance evaluation of the learning environment minister. Mobile classrooms for use as a base. Data were analyzed by means of a summary interpretation.
- a measure of motivation of the learner. Find statistics mean, standard deviation (SD) and percentage (Percentage) were then compared to the predetermined criteria. The students had an average score of at least 70 percent.
- an achievement of learners, learning environment with learning disabilities. From the posttest. The student must pass 70 percent to 100 percent of full points.
- Review of students who use the Mobile Base System Management Learning Environment. Protocol analysis using the framework to evaluate the effectiveness of the learning environment. And summary and interpretation of analytical narrative. From the feedback of the students. After studying the learning environment minister. This is an open-ended questionnaire.



Figure 3. Soktae school studied by Mobile-based learning (Left) and Nongsiangsui – Nonsa-at school studied Traditional learning (Right).

## 4. Result and discussion

### 4.1 Evaluation of Student's Learning Achievement in Phase1

*Evaluation of Student's Learning Achievement:* The learning achievement of the 31 target group was found that the pretest of Soktae school was  $\bar{x} = 4.5$ , S.D. = 1.27 and Nongsiangsui – Nonsa-at school was  $\bar{x} = 4.43$ , S.D. = 1.77 and two schools have T-Test that is -0.07754 as shown in the Figure 4.

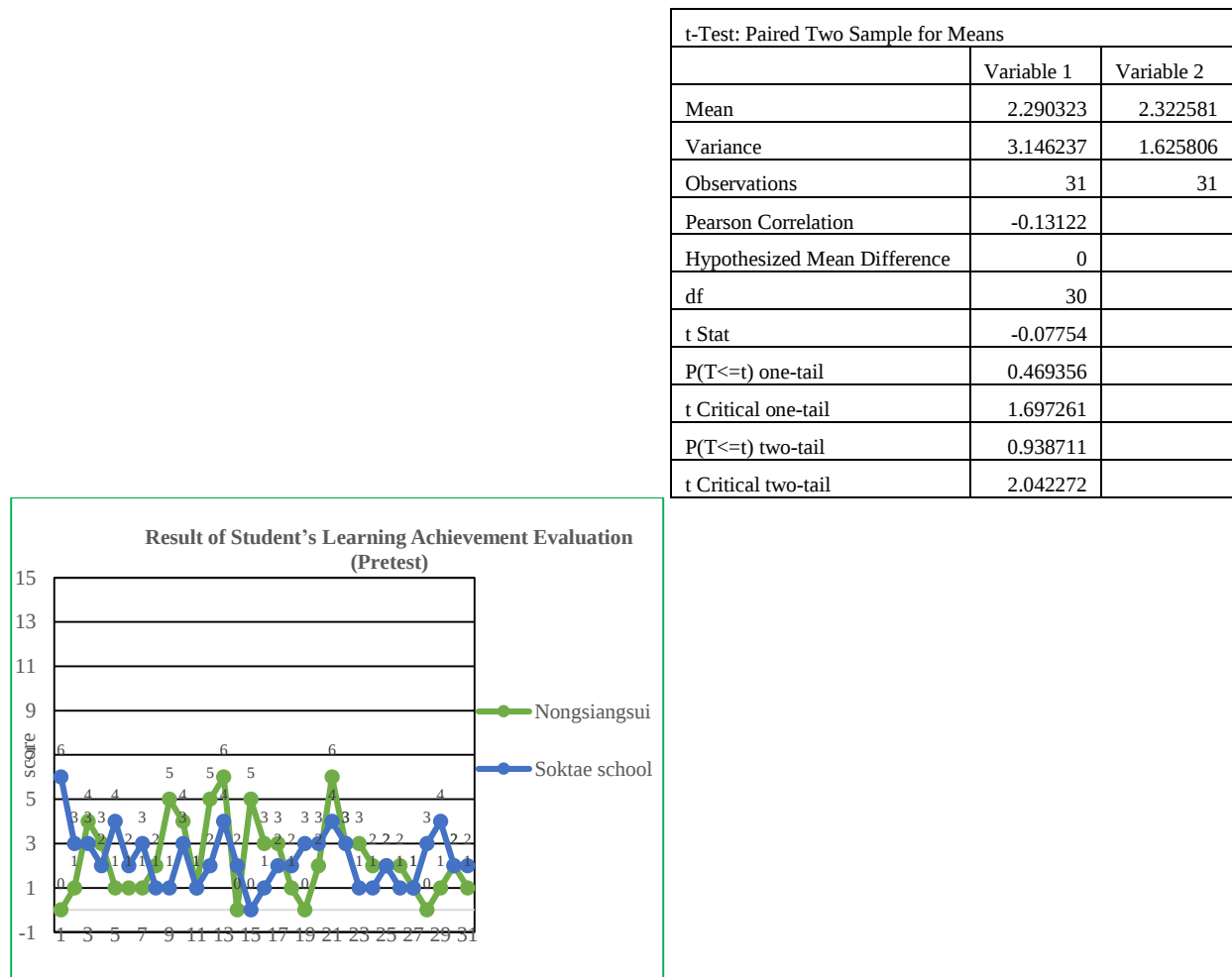


Figure 4. Result of Learning Achievement Evaluation (Pretest) (Left) and T-Test (Right).

### 4.2 Evaluation of Student's Opinions

*Evaluation of Student's Opinions:* Studied their opinions towards innovation throughout the survey form questionnaire, students at Soktae school told that using Mobile-based learning made them was excited and encourage them want to learn and think. They got to search the information that they didn't know before by using mobile. It is easy and contemporary. But students at Nongsiangsui – Nonsa-at school told that learned from traditional learning just learn from the teachers and materials that they prepared that only. When they wanted more information, they could not search from other information source and they thought that Learn using Mobile-based learning will make them get

more knowledge.

## 5. Conclusion & future work

This study designed reported using Constructivism Mobile-Based Learning Environment on English Subject for Junior High School students in Thailand. The value of this study Constructivism Mobile-Based Learning Environment on English Subject was approved by experts and constructivist learning was made among the target group. For future study, we plan to improve the Constructivism Mobile-Based Learning Environment functionality and develop mobile application.

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