

# Online Learning Activities Kit on Plants in Thai Literature in Compliance with the School Botanical Garden of Plant Genetic Conservation Project under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn

Pornpapatsorn Princhankol, Kannika Udnunkarn

**Abstract**—This research was aimed to develop and determine the quality of online learning activities kit as well as to examine the learning achievement of students and their satisfaction towards the kit through authentic assessment. The tools in this research contained online learning activities kit on plant in Thai literature in compliance with the School Botanical Garden of Plant Genetic Conservation Project under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn, the assessment form, the learning achievement test, the satisfaction form and the authentic assessment form. The population consisted of 40 students in the second range of primary years (Prathomsuksa 4 to 6) at Ban Khao Rak School, Suratthani Province, Thailand. The research results showed that the content quality of the developed online learning activities kit as assessed by the experts was 4.70 on average or at very high level. The pre-test and post-test comparison was made to examine the learning achievement and it revealed that the post-test score was higher than the pre-test score with statistical significance at the .01 level. The satisfaction of the sampling group towards the online learning activities kit was 4.74 or at the highest level. The authentic assessment showed an average of 1.69 or at good level. Therefore, the online learning activities kit on plant in Thai literature in compliance with the School Botanical Garden of Plant Genetic Conservation Project under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn could be used in real classroom situations.

**Keywords**—Online learning activities kit, Plants in Thai literature, School Botanical garden

## I. INTRODUCTION

**H**IS Majesty the King of Thailand, Bhumiphol Adulyadej identified the importance of plant genetic conservation. The survey of government organization found that the natural resources were destroyed in various types and this caused the loss of many kinds of trees. In 1960, His Majesty the King held the project of Yang Na Tree conservation and a year later,

Asst.Prof.Dr.Pornpapatsorn Princhankol is with the Educational Communications and Technology Department, King Mongkut's University of Technology Thonburi, Bangkok, Thailand (e-mail: pornpapatsorn.pri@kmutt.ac.th).

Kannika Udnunkarn is with the Educational Communications and Technology Department, King Mongkut's University of Technology Thonburi, Bangkok, Thailand (e-mail: kannika@hotmail.com).

many kinds of trees from various regions of Thailand were planted in Jitlada Royal Garden. Those kinds of trees are used as fundamental resource for learning. The Royal Projects initiated by His Majesty the King include natural resource conservation, water resource development, soil conservation and development, forest conservation for the reason of natural resource conservation. In 1994, Her Royal Highness Princess Maha Chakri Sirindhorn had continued those Royal Projects further until present time.[1]

The project of genetic conservation is aimed to make an attention of the youth and people in community to realize the importance of plant genetic resources, to save and use those resources effectively. Consequently, the project is very important for resource management, resource conservation and resource use. The project particularly organized for the youth in the form of training. The benefits the youth got from the training are the aesthetics and pride in resource conservation. Examples of the project activities can be stated as follows. "School Botanical Garden Fair" this is where various kinds of plants both alive and in preserved form are shown and displayed in botanical garden of the school involved in the project. There exists library for the students and people in the community to study and it plays an important role as the continuous learning resource. The school acts as a community wisdom center in studying and collecting domestic scarcely plants or becoming extinct. The school botanical garden that joins this royal project would be part of "The School Botanical Garden under the Royal Project for Genetic Plants Conservation". Moreover, the activities of the project can be held in the form of plants exhibition, natural science exhibition, Thailand Island and Coast Exhibition. All of these activities would hopefully bring about the youth's concern in plant conservation, realize the advantages and aesthetics of plant conservation [2]

Her Royal highness Princess Maha Chakri Sirindhorn shared some idea about plant conservation. That is "Teaching and training to bring about the youth's concern in plant conservation should build up the value of the youth to realize the aesthetics, interest and pride of plant conservation. The youth should be taught. They should realize the disadvantages and see the long term effects that would occur in Thailand if

they are not take part in the project". [3] As mentioned, Ban Kao-rak School submitted and joined this Royal Project of plant genetic conservation. The school staffs share the same opinion that students should create their values of plant genetic conservation and act for conserving plant genetics. The students should be participated closely to all activities involved all of these plants and therefore be motivated to be members of the project. The school environment and School Botanical Garden would concentrate mainly on preserving many kinds of rare trees. The five main purposes of the Botanical Garden Fair are 1) Making nameplate for the trees 2) Collecting various kinds of trees into school 3) Studying trees in more depths and details , 4) Reporting learning results and 5) Implementing for Education

Because of the importance and advantages of plant genetic conservation as mentioned, the researcher attempts to develop online learning activities kit to reach the behavioral objectives in form of online activities kit on the topic "Thai Literature Various kinds of Plants" using form of school botanical garden of Royal Project for genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn. The researcher designed online lessons and activities for creating school botanical garden according to the composition of school botanical garden and the researcher's experiences in designing learning activities about Thai literature trees. In addition, the students will realize to conserve many kinds of genetic plants.

## II. RESEARCH OBJECTIVE

- To develop and determine the quality of online learning activities kit on the topic "Plants in Thai literature" according to the form of school botanical garden in Royal Project for genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn.
- To study the learning achievement of the students who study from online learning activities kit
- To evaluate the satisfaction of the students toward online learning activities kit.
- To authentically evaluate the capability of students in creating botanical garden consisting of Thai literature plants according to the form of school botanical garden in Royal Project for genetic plants conservation.

## III. EXPECTED BENEFIT FROM THE RESEARCH

- To obtain an effective online learning activities kit on the topic "Plants in Thai literature" according to the form of school botanical garden in Royal Project for genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn.
- To promote learning activities for values of plant genetic conservation of plants in Thai literature.

## IV. SCOPES OF RESEARCH

### A. Content scope

Online learning activities kit on the topic "Plants in Thai literature" has concerned about a) 5 compositions of botanical garden are: (1) Making nameplate for the trees (2) Collecting various kinds of trees into school (3) Studying trees in more depths and details , (4) Reporting learning results and (5) Implementing for Education) b) Online learning activities kit on the topic "Plants in Thai literature" involves 6 core activities: (1) Happy with Thai literature plants (2) Creating nameplate for the trees (3) Grow together (4) Cooperative study (5) Funny Presentation (6) Useful implementation.

### B. Research Variables

Dependent variable is online learning activities kit on the topic "Plants in Thai literature" according to the form of school botanical garden in Royal Project for genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn. Independent Variables are

- 1) The quality of online learning activities kit.
- 2) The learning achievement of the students who study from online learning activities kit.
- 3) The satisfaction of the students toward online learning activities kit.
- 4) The authentic evaluation results in capability of students in creating botanical garden consisting of Thai literature plants according to the form of school botanical garden in Royal Project.

### C. Population

The 99 students who were studying Prathom Suksa 1-6 of Kao-rak School, Suratthani, second semester, academic year 2010.

### D. Samples

The 40 students were simple random sampled for this study.

### E. Research Instruments

This research used one group pretest posttest only design to find out the quality of online learning activities kit, learning achievement, learners' satisfaction and authentic evaluation on online learning activities kit. The instruments used in the research are

- 1) Online learning activities kit on the topic "Plants in Thai literature" according to the form of school botanical garden in Royal Project for genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn.
- 2) The quality evaluation form of online learning activities kit.
- 3) The learning achievement test for online learning activities kit.
- 4) The satisfaction evaluation form of the students toward online learning activities kit.
- 5) The authentic evaluation form in capability of students in creating botanical garden consisting of Thai literature plants according to the form of school botanical garden in Royal Project.

- 6) Data analysis used in the research are mean, standard deviation (S.D.), Index of Item Objective Congruence: IOC, difficulty and discrimination of the test, Reliability (KR20), and t-test dependent.

V. RESEARCH FINDINGS

- The quality of Online learning activities kit on the topic “Plants in Thai literature” is obtained at the level of “very good” (Mean score = 4.70).
- The mean score of learning achievement posttest for online learning activities kit is significantly higher than the mean score of learning achievement pretest at the level of .01.
- The satisfaction of the students toward online learning activities kit is at the level of “maximum” (Mean score = 4.74).
- The authentic evaluation results in capability of students in creating botanical garden consisting of Thai literature plants according to the form of school botanical garden in Royal Project is at the level of “good” with mean score = 1.69.



Fig. 1 Orientation



Fig. 2 Online Learning Lessons



Fig. 3 Online Learning



Fig. 4 Work Sheets



Fig. 5 Students in creating botanical garden



Fig. 6 Reporting Activities Result

VI. DISCUSSION OF RESEARCH FINDINGS

At the end of the developing process of online learning activities kit on the topic “Plants in Thai literature” according to the form of school botanical garden in Royal Project for genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn; the quality of Online learning activities kit is found to be at the “very good” level

The mean score of learning achievement posttest for online learning activities kit on the topic “Plants in Thai literature” is significantly higher than the mean score of learning achievement pretest at the level of .01. These findings follow the hypothesis and are in concurrence with the results of the research conducted by Suphan Kiatcharoen [4] who studied the development of learning centered activities kit on the topic “Drugs” for Prathom Suksa 6. The finding were that posttest mean score is significantly higher than pretest mean score at the level of .01 and also match with the research findings of Watcharin Kawicha [5] that studied the satisfaction of Prathom Suksa 2nd level students of Baan Maesin School, Phrae province. The satisfaction of 33 samples are at the level of “maximum”. Furthermore, the research finding about authentic evaluation from port folio and group work observation, the findings are at the level of “matched with of “good”. Prapaporn Sitrakoon [6] mentioned that authentic evaluation is the decision making of knowledge, capability and skills of the learners as they are set in their real situation.

Authentic evaluation uses the real situation in daily activities of the learners as the concept of “Learning by Doing”. The quality outcomes identify the learners’ knowledge, capability and skills.

## VII. SUGGESTION

### A. Suggestion for Applying the Research Findings

- 1) According to the good quality of online learning activities and its improvement in learning achievement, it therefore should be implemented into the study process conducted in the classroom.
- 2) Authentic evaluation in forms of group process, cooperative learning, joyful learning, and using port folio should be carried out in the instruction of online learning activities.
- 3) The online learning activities should be informed or introduced among the network members or schools that are interesting in this approach.

### B. Suggestion for Further Research

- 1) The online learning activities can be integrated with others subject group to promote self knowledge construction and share knowledge with others. So it is suitably integrated with other subject groups.
- 2) The research for evaluating the students’ behavioral change using learning activities kit on the topic “Plants in Thai literature” should be done for applying in developing effectively learning kits.

## REFERENCES

- [1] Royal Project for genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn. *Master plan project of genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn*, Period 5, 4 (October 2006 – September 2011) Project of genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn Jitlada Royal Garden, Bangkok, 2006, pp. 1-2.
- [2] P. Chutamart, *Manual for School Botanical Garden*. Activities of Plant Conservation Value, 1st edition, Project for genetic plants conservation of Her Royal Highness Princess Maha Chakri Sirindhorn, Jitlada Royal Garden, Bangkok, 2008, pp.21-70.
- [3] P. Chutamart, His Majesty the King Thinking [Online], Available: [http://www.rspg.or.th/botanical\\_school/school\\_bot\\_11.htm](http://www.rspg.or.th/botanical_school/school_bot_11.htm), 2010.
- [4] S. Kiatcharoen, *Development of learning centered activities kit of Sociology Religion and Culture on the topic “Drugs” for Prathom Suksa 6*. Thesis for Master’s degree of Education Curriculum and Instruction field, Faculty of Education, Uttaradit Rajabhat University, 2004, abstract.
- [5] W. Kawicha, *Development of Extra curriculum in Environmental Study for second level students*. Thesis for Master’s degree of Education Curriculum and Instruction field, Faculty of Education, Uttaradit Rajabhat University, 2005, abstract.
- [6] P. Sitrakoon, *Educational Evaluation*. Faculty of Education, Khonkaen University, Khonkaen, 2006, pp.7-8.