**The Development of Learning Activity towards Verification Learning Principle on the Competencies of Curriculum and Learning Management Science Course Integrated with Sakon Nakhon Local Wisdom**

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**Abstract**

The purposes of this research were to develop learning activities based on verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom, and to study the results of providing learning activities towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom: the results of curriculum development integrated with Sakon Nakhon local wisdom, the results of reflection learning log about work performance on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom, and the satisfaction of learning towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom. The research and development (R&D) design was employed in this study. The samples were thirty-one of second-year students that the simple random sampling as a lottery technique was assigned. By using the study group as a random unit, 1 group studied in the curriculum and learning management science in the 2020 academic year. The statistics used in the research were mean and standard deviation.

The findings were as follows:

1. The results of the development of learning activities towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom found five main steps of verification learning processes (step 1: define teaching objectives, step 2: pretest, step 3: verification teaching, step 4: test to confirm the results of learning, and step 5: remedial teaching for learning retention). These steps were used to be the main indicators for learning management after the researchers had studied the focuses of verification learning principle: students know the learning objectives together, students reach learning objectives for each time, and students enable to prove together with their generated learning.

2. The results of providing learning activities towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom were as follows:

2.1 The results of curriculum development integrated with Sakon Nakhon local wisdom led to 10 works with different learning activities. Brain-Based Learning (BBL) was generated for primary 4 in the topic of Cultural Heritage of Buddhism. Creative-Based Learning (CBL) was activated for primary 5 in the topic of Study of Local History. Creative-Based Learning (CBL) was activated for primary 3 in the topic of Community Settlement Factors. Storyline Model was assigned for primary 3 in the topic of Know Me, Know You, Know Thai Society. Experiential Learning was employed for primary 4 in the topic of The History Evidence of Local. MACRO Model was administrated for primary 2 in the topic of Thai Local Wisdoms. The 5Es of Inquiry –Based (5Es) was assigned for primary 6 in the topic of Roles and Responsibilities of Local Organization. 4 MAT was used for Mattayomsuksa 1 in the topic of Using Local Geographic Tools. MACRO model was employed for Mattayomsuksa 3 in the topic of Resources and Environments Management in the Continent of America, and Problem-Based Learning (PBL) was activated for Mattayomsuksa 3 in the topic of Causes and Effects of Natural Disaster on the Continents.

2.2 The results of reflection learning log about work performance on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom were found that the students impressed with the intensive content knowledge of instructors. The learning contents were consistent with several learning activities. The several of learning activities, details, and a warm learning atmosphere promoted better learning that also helped students to understand clearly with the learning content of each topic. Students’ recommendation of teaching process were reducing high speed lecture of instructors, adjusting learning content with the squeezed time, and insufficient time for individual student’s assignment moderating

2.3 The results of students’ satisfactions of learning towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom were as follows:

The overall satisfaction of learning towards the verification learning principle was at the most level ($\overbar{X}$ = 4.75, S.D. = 0.43). The consideration of each domain found that the three highest mean averages were that students satisfied with verification learning ($\overbar{X}$ = 4.88, S.D. = 0.34), students reflected that verification learning brought about advantages of working and learning ($\overbar{X}$ = 4.88, S.D. = 0.34), and students enabled to practice learning activities either by themselves, peer learning, or facilitated teacher ($\overbar{X}$ = 4.84, S.D. = 0.37).

**Keywords:** Verification Learning Principle, the Competencies of Curriculum Science Course, Integrated Sakon Nakhon Local Wisdom

**1. Introduction**

From trend of educational reform, several countries have focused on learners’ “skill” or work experience rather than their content knowledge from textbooks. Unesco (n.d.) recommended that learners would have three domains of skills: fundamental skills which are important for their living such as literacy and calculating skills, working skills which is a basic skill for all occupations (e.g., information technology, analytic and creative thinking, team work, and communication), and specific skills for careers which aim at different individual interests (Upper Secondary Education Bureau, Office of the Basic Education Commission, n.d.) The important skills may not effectively be activated by learners if teachers remain to use traditions teaching approaches in globalization era. Similarly, Chumjit (2007, as cited in Panichpalinchai & Tanabhatchotiwat, 2016) stated that teachers have to have knowledge, capabilities and competencies for learning management and they need to have modern and expansive knowledge in worldwide. Teachers can also catch up with the modern of science and technology with the transformation of things surrounding them because teachers are the key man to provide learning experience for learners.

Moreover, teachers are not only the facilitator to support students’ learning but also they have to be a good explorer as their roles such as providing modern learning contents for students. If teachers cannot manage class teaching and explore to modern information in the era of knowledge transformation their teaching management would be outdating. Therefore, teachers have to learn several things in real world. They not only learn for survivals living but also learn to be a professional teacher. Moreover, teachers always have to develop their sciences and arts of teaching (e.g., learning about curriculum, exploring educational administration policy, observing environment of learning both inside and outside school, and so on). Specifically, teachers would assign students to learn from resources in their communities such as learning about skills of local wisdom, way of local living and so on. An important factor for teachers’ learning to understand intensively is that teachers have to learn to know their students such as background knowledge, learning capabilities, strengths and weaknesses, aptitudes, needs, interests and individual learning behaviors (Buasuwan & Tongthai, 2019).

As such, the researchers who have played the roles of lecturers in faculty of education always have to improve learning with modern education transformation. Faculty of education is one of the main sectors for providing and supporting the development of competency-based curriculum to be used effectively by practitioners in practice. The researchers are aware of the important and imperative improvement of teaching approaches through a modern teaching approach which is “Verification Teaching”. This teaching approach focuses on classroom learning management basing on the teachers’ defining the learning objectives. Students also have to know that they will be tested depending on learning objectives. If students who cannot improve their learning, teachers have to re-teach and re-test students until every students can achieve all learning objectives (Kaemmanee, 2011).

Accordingly, the researchers aim at conducting a research study about learning activities development towards verification teaching principle basing on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom to motivate the educational reform relating to living transformation, working, learning, problem-solving, self-adaptation for transformation and modern needs of societies and world. Competency-based curriculum development is a trend to be an alternative choice to assist teaching and learning problems of teachers and students. The verification learning would be the effective teaching approach for modern needs in 21st century.

**2. Objectives**

The purposed of this study were;

1. to develop the learning activities towards verification leaching principle basing on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom,

2. to study the results of providing learning activities towards verification leaching principle basing on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom:

2.1 the results of curriculum development integrated with Sakon Nahon local wisdom

2.2 the results of reflection learning log about work performance on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom

2.3 satisfactions of learning towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom.

**3. Literature Review**

 The areas of literature were reviewed as follows.

1. Competency-based learning management

2. Competency-based courses and learning management

3. Verification learning principle

4. Integrated local wisdom principle

5. Related research studies

**4. Conceptual Framework**

**The results of learning activities development**

1) works of curriculum development integrated with Sakhon Nakon local wisdom

2) work performance based on course competency through reflection of learning log

3) satisfaction of learning towards verification learning principle on course competency-based

Learning activities towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom

Integration of Sakhon Nakon local wisdom

Verification learning principle

Competences of Curriculum and Learning Management Science Course

Development guidelines of educational innovation

**5. Research Methodology**

This research study was research and development design (R&D). There were two steps of the study.

Step 1 was conducting and testing the efficiency of the learning activities towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom.

The researchers studied the background information about educational innovation development guidelines, verification learning principle, competencies of curriculum course, and integration of Sakon Nakhon local wisdom to bring about the important issues for curriculum development. Then the learning activities on course competence were designed to conduct works and explicit knowledge from real experience. The efficiency of curriculum was assessed by 3 experts in the fields of curriculum and teaching, measurement and evaluation, and educational innovation development.

 Step 2 was the trial of learning activities towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom

This process focused on the trial of using learning activities that had already been designed and created in the first step. There were three issues to focus on this process:the result of curriculum development integrated with Sakon Nahon local wisdom, the result of work performance based on course competence by the reflection learning log, and satisfactions of learning towards verification learning on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom

**Research Instruments**

The research instruments were assigned basing on the research procedures in the following steps.

Step 1 was conducting and testing the efficiency of learning activities through verification learning principle basing on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom:

1) lesson plans towards verification learning principle basing on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom,

2) the evaluation form of learning activities appropriateness which was five Likert-scale: most, more , moderate, little, and least.

Step 2 was the trial of learning activities towards verification learning principle basing on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom. There were four research instruments in this step as follows:

The first instrument was lesson plans towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom through five steps learning.

The second instrument was the evaluation form of curriculum development integrated with Sakhon Nakon local wisdom. The form was an analytic rubric that the IOC and Inter-Rater Reliability were assigned for checking reliability by by the same group of experts in step1.

The third instrument was the evaluation form of satisfactions of learning towards verification learning principle basing on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom. The evaluation form was five Likert-scale that it was checked for the reliability by the same group of experts in step1.

The fourth instrument was learning log which focused on questions about the results of work performance through competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom. It was designed by the researchers that the reliability of the instruments were evaluated by the same group of experts in step1.

**Data Analysis**

 Data analysis techniques were 1) study the number of works from curriculum development integrated with Sakhon Nakon wisdom and quality of those works, 2) evaluate the reflection learning log by contents analysis, and 3) evaluate the satisfactions of learning by using basis statistics.

**6. Results of This Research**

The results of this study were as follows: 1. the results of learning activities development towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom

It found that the focuses of verification learning principle were learners’ engaging to understand the learning objectives together, reaching the learning objectives for each time, enabling to prove learners’ generated their learning. Therefore, these focuses led to five main indicators of verification learning principle.

Step 1: identify the teaching objectives

Step 2: pretest

Step 3: verification teaching

Step 4: testing for confirmation of learning achievement

Step 5: remedial teaching for the learning retention

 2. The results of learning activities towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom

 2.1 The result of curriculum development integrated with Sakhon Nakon local wisdom found works as follows:

- The first lesson plan: Cultural Heritage of Buddhism of primary 5 students. The teaching approach focused on brain-based learning (BBL).

- The second lesson plan: Study of Local History of primary 5 students. The teaching approach focused on creativity-based learning (CBL).

- The tenth lesson plan: Community Settlement Factors of primary 3 students. The teaching approach focused on creative-based learning (CBL)

- The eleventh lesson plan: Know Me, Know You, Know Thai Society of primary 3 students. The teaching approach focused on storyline model.

- The twelfth lesson plan: The History Evidence of Local of primary 4. The teaching approach focused on experiential learning.

- The fifteenth lesson plan: Thai Local Wisdoms of primary 2 students. The teaching approach focused on MACRO model.

- The sixteenth lesson plan: Roles and Responsibilities of Local Organization of Primary 6. The teaching approach focused on The 5Es of inquiry–based (5Es).

- The seventeenth lesson plan: Using Local Geographic Tools of Mattayomsuksa 1. The teaching approach focused on 4 MAT.

- The twenty-seventh lesson plan: Resources and Environments Management in America Continentv of Mattayomsuksa 3. The teaching approach focused on MACRO model.

- The forty first lesson plan: Causes and Effects of Nature Disaster for Continent of Mattayomsuksa 3. The teaching approach focused on problem-based learning (PBL)

 2.2 The results of work performance based on competencies of Curriculum Course from the reflection learning log

The reflection learning log found that students impressed with teachers who have explicit content knowledge of teaching, learning contents related to several learning activities, learning atmosphere to support learning effectively. Verification learning supported students to understand each learning topic clearly. However, the recommendation for improvement was the high speed of teachers’ speaking, time limit for some lessons, and insufficient of individual assignment checking.

 2.3 The results of satisfactions of learning towards the verification learning principle basing on competencies of Curriculum Course

The overall evaluation of satisfactions of learning towards verification learning principle basing on competencies of Curriculum Course was at the most level ($\overbar{X}$ = 4.75, S.D. = 0.43). The consideration of each domain found that the highest of three mean averages were that students satisfied with verification learning ($\overbar{X}$ = 4.88, S.D. = 0.34), students reflected that verification learning brought about advantages of working and learning ($\overbar{X}$ = 4.88, S.D. = 0.34), and students practiced not only learning by themselves but also peer learning and facilitated teacher ($\overbar{X}$ = 4.84, S.D. = 0.37).

**7. Conclusion and Discussion**

 The research results were concluded and discussed as follows:

1. The results of this study based on the development of learning activities towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom.

There were five steps of learning management from the study of principles of educational innovation development, verification learning, competency-based learning management, and course competence.

Step 1: identify the teaching objectives

Step 2: pretest

Step 3: verification teaching

Step 4: testing for confirmation of learning achievement

Step 5: remedial teaching for the learning retention

The researchers took these steps from innovative learning management. Ritjaroon (2016) noted that the important processes of innovative development consist of learning problem analysis, study and selection of innovation for solving learning problems, innovation design, innovation conducting, testing of innovation’s efficiency by experts, the evaluation of innovation’s efficiency and trial, and reporting of the result of innovation development. These processes were chronologically arranged relating to innovation development steps. Moreover, these seven steps related to verification learning principle as Laska (1990, as cited in Kaemmanee, 2011) stated that verification learning is the teachers’ defining teaching objectives in their teaching management which would be either a part or all parts of learning objectives. The objectives can also be in general or specific purposes that can prove learners’ learning through the defining objectives. Teachers conduct individual tests on learners for that objective. Learners have to know that they will be tested with the objectives before learning. From the test result, if learners have not generated their learning with the learning objectives teachers have to re-teach and re-test until all learners can generate their learning with all learning objectives; or teachers could decide not to use verification learning onwards. Therefore, defining learning objectives should be defined appropriately and impossibly for learners to learn.

 2. The results of learning activities towards verification learning principle on the competencies of Curriculum and Learning Management Science Course integrated with Sakon Nakhon local wisdom

Learners enabled to create works form curriculum development integrated with Sakon Nakhon local wisdom. It would be that the researchers arranged the steps of learning activities consistently with the indicators of verification learning principle. Similarly, Laska (1990, as cited in Kaemmanee, 2011) mentioned that teachers have to define teaching objectives clearly and the objectives can be testable. Learners also know the learning objectives before learning and testing. Moreover, teachers have to conduct individual test for learners to evaluate that they can generated their learning or not. Teachers would re-teach for students who were not pass those learning objectives and teachers also re-test until all learners can pass all learning objectives.

**8. Suggestions**

8.1Applying the results of this study, the practitioners who would use teaching activities of verification learning principle may intensively study the activities of verification learning principle to make a very good understanding before applying it for teaching. Moreover, the practitioners may have to consider about time of activities arrangement that it has to be appropriated with the content of curriculum and students’ capabilities.

8.2The further research may consider to conduct the study about the retention of students’ learning.

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