



Pre-service Teacher's Learning Behaviors of Thailand Qualification Framework by Using Research-based Learning

Puangpaka Paweenbampen*

Faculty of Education, Suan Dusit University, Lampang Campus 52100, Thailand

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Abstract

The purpose of this research was two-fold: 1) to study pre-service teacher's learning behaviors of Thailand Qualification Framework by using research-based learning, and 2) to compare pre-service teacher's learning behaviors of Thailand Qualification Framework before and after using research-based learning. Data collection was obtained from fourth-year students studying in Early Childhood Education; consisting of 60 students enrolled in Classroom Action Research Course in the second semester of academic year 2016. Research instruments consisted of the research-based lesson plan, learning behaviors questionnaire and learning behaviors observation form. The data were analyzed by using Mean (\bar{X}) and Standard Deviation (SD) while t-test for dependent was employed for the comparison of learning behaviors. The research findings were summarized as follow: 1. Before using research-based learning, the pre-service teachers had learning behaviors of Thailand Qualification Framework at a high level. 2. After using research-based learning, the pre-service teachers had learning behaviors of Thailand Qualification Framework at a highest level. 3. After using research-based learning, the pre-service teachers had learning behaviors of Thailand Qualification Framework higher than before using research-based learning at the 0.01 level of significance

Introduction

The purposes and principles of education management according to the Nation Education Act B.E.2542 was created for Thai people to aim for human perfection for their health, mind, intelligence, knowledge, virtue, ethics, and culture to spend their life happily with other peoples. Provided education was to emphasize the lifetime education for people and allow them to

participate continuously in education management, content development, and learning processes. Research processes were significantly focused on being part of the learning processes as indicated in category 4 section 24 (5) that "Encourage teachers to be able to create atmosphere, environment, learning tools and to provide any conveniences so that students can learn and be knowledgeable including the use of research as part of the learning processes. Both teachers and students may

possibly learn together from instructional media and from multiple science sources.” Moreover, it was important for students to learn from experience, practice, thinking method, management, faced with the situation to adapt all knowledge to prevent and solve any problems.

The teacher-centered concept was the former learning tool which actually could not improve students so it was transformed into the student-centered concept. Principles of learning-teaching management processes focused on students for seeking knowledge and improve their capabilities potential, including encouragement to practice from working situation. Also, it connects the lesson with society and learn from multiple situations both from inside and outside the classroom. To provide activities and processes for students to analyze, synthesize, evaluate, and create anything not only to memorize the content; therefore, they can learn more independently. We could say that education was changed to learning significantly more than only from teaching. From this principle, educators developed the activities for students to achieve the most advantages which is called research-based learning (RBL). It is the learning tool that focuses on research processes skill, analytical thinking improvement, and data integration. Many teachers are interested in these teaching processes because it can be used for all courses and all level of education (Wichadee, 2011). Research-based learning is a creative learning technique that has a focus on students to improve their creativity. It means students can do self-research, problem-solving, analytical thinking along with self-learning with the teaching supporting the student-centered concept (Sinlarut, 2014). A significant principle of this learning is for students to learn, practice and seek knowledge systematically in order to discover knowledge by themselves or a kind of learning-teaching processes applying research-based learning. Teachers create circumstance for students to use research processes or research result to be a learning tool or may use research review as part of content teaching, use research result as content for learning, use research processes to study content, or do self-research (Khammanee, 2012; Sinlarut, 2014).

The aim of the classroom research course is to learn research methodology and research processes skills, as well as apply the research skill to early childhood development research. In addition the course focused on developing students code of conduct and virtue on their research, to be honest to themselves and to academic matters. When researchers analyzed the learning behavior course of TQF 3, which consists of 1) ethics

and virtue 2) knowledge 3) intelligent skill 4) relationship and responsibility skill and 5) numerical communication analysis skill and applying information technology skill, researchers as teachers noticed the purposes of research lesson in classroom to be in line with the principals and concepts of research-based learning. It was for students to be able to do self-research, problems solving, analysis along with self-seeking knowledge. Teachers and students could use research results to be component of learning management, including the use of research processes to integrate the content in the following 4 steps – 1) pose questions 2) prepare and discover answers 3) seek and verify answers 4) conclude and present answers. Research assists in learning development processes by training researchers to not be afraid to ask questions, be able to pose questions, be inquisitive, be creative. The main component of research is knowledge discovery and problem solving which consists of 2 important methods – 1.) qualitative and quantitative data and 2.) creativity. Researchers should have creative thinking in considering any matters or data. From practicing the qualities of researching, researchers gain the practice of being inquisitive, being enthusiastic, and being reasonable.. The results of research study could lead to the understanding, predicting, or controlling the phenomenon to increase the capability on problem-solving (Pitiyanuwat and Bunterm, 1994).

Therefore, researchers are required to study and compare learning behavior according to qualification framework when organizing research-based learning course in the classroom for fourth-year students in early childhood education at Suan Dusit University, Lampang Campus. They could use knowledge to improve learning management processes to be in line with the purposes of each course and learning development of students to acquire learning outcomes according to Qualification Framework of Thailand in university education level and could guarantee their qualification to be bachelor in the future.

Objectives

1. To study pre-service teacher’s learning behaviors of Thailand Qualification Framework by using research-based learning.
2. To compare pre-service teacher’s learning behaviors of Thailand Qualification Framework before and after using research-based learning.

Conceptual Framework

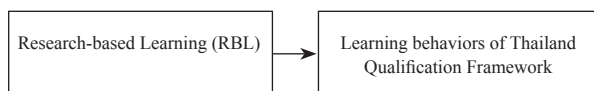


Figure 1 Conceptual Framework

Research Methodology

1. Samples

The study involved 4th year undergraduate student in early childhood education from Suan Dusit University of Lampang, Thailand, who were enrolled in a classroom action research course. Sixty undergraduate students participated in the study voluntarily and received no extra credit for the course.

2. Research Instrument

Research-based lesson plan

Research-based lesson plans were designed as follow

1.1 Analyzed the relationship between the course specifications (TQF3.) and learning behaviors.

1.2 Designed the learning process according to the content of classroom action research course. Consider selecting a learning style that allows the learner to ask questions, perform research and present the results. Participants have conducted small research project to study the basic principles from textbooks, documents or lectures, as well as academic discussions. The lesson plans consist of learning hours, learning content, learning activities, and learning evaluation.

1.3 Analyze the lesson plan with the instructor in the field and the academic department to consider compliance with the course specifications (TQF3.).

Questionnaire on learning behaviors

An online self-evaluation questionnaire was used to assess pre-service teachers learning behaviors. The questionnaire consisted of 89 items; ethical and moral development aspect 25 items, knowledge aspect 10 items, cognitive skills aspect 18 items, interpersonal skills and responsibility aspect 22 items, and analytical and communication skill aspect 14 items. Responses were given on a 5-point rating scale ranging from 1 ("lowest level") to 5 ("highest level"). Cronbach's α (a measure of reliability) was 0.98

The observation form

To obtain the information about pre-service teachers learning behaviors in the classroom, the researcher used a semi-structured observation forms that

were created from the related documents of Thailand qualification framework learning outcome.

3. Collection of Data

The researcher conducted research-based learning in a classroom for 15 weeks and collected data by using the learning behaviors questionnaires for pretest and post-test and observed student's learning behaviors.

4. Data Analysis

Data Analysis was conducted using mean (\bar{x}) and standard deviation (SD) for describing the student's background. The statistical test employed dependent t-test for the comparison of learning behaviors of pre-service teacher.

Results

1. The study of learning behaviors of Thailand Qualification Framework

Before using research-based learning the pre-service teacher's learning behaviors was at high level ($\bar{x} = 3.57$, SD = 0.52). Considering the learning behavior domains it was found that ethical and moral development domain had the highest score ($\bar{x} = 3.90$, SD = 0.52). Interpersonal skills and responsibility domain was the subordinate domain ($\bar{x} = 3.66$, SD = 0.66). On the other hand, knowledge domain and cognitive skills domain had the lowest score ($\bar{x} = 3.26$, SD = 0.65 and $\bar{x} = 3.26$, SD = 0.64), as shown in Table 1.

Table 1 Level of learning behaviors of Thailand Qualification Framework before using research-based learning

Learning Behavior Domains	\bar{x}	SD	Level
1. Ethical and Moral Development	3.90	0.52	high
2. Knowledge	3.26	0.65	moderate
3. Cognitive skills	3.26	0.64	moderate
4. Interpersonal skills and responsibility	3.66	0.66	high
5. Analytical and communication skill	3.27	0.59	moderate
Total	3.57	0.52	high

After using research-based learning the pre-service teacher's learning behaviors was at highest level ($\bar{x} = 4.30$, SD = 0.37). Considering the learning behavior domains found that ethical and moral development domain had the highest score ($\bar{x} = 4.48$, SD = 0.38). Interpersonal skills and responsibility domain was the subordinate domain ($\bar{x} = 4.36$, SD = 0.39). On the other hand, analytical and communication skill domain had the lowest score ($\bar{x} = 4.11$, SD = 0.48) as shown in Table 2.

Table 2 Level of learning behaviors of Thailand Qualification Framework after using research-based learning

Learning Behavior Domains	\bar{X}	SD	Level
1. Ethical and Moral Development	4.48	0.38	highest
2. Knowledge	4.20	0.42	high
3. Cognitive skills	4.16	0.63	high
4. Interpersonal skills and responsibility	4.36	0.39	highest
5. Analytical and communication skill	4.11	0.48	high
Total	4.30	0.37	highest

2. The comparison of learning behaviors of Thailand Qualification Framework

After using research-based learning, the pre-service teachers had learning behaviors of Thailand Qualification Framework higher than before using research-based learning at 0.01 level of significance, as shown in Table 3.

Table 3 Comparison of learning behaviors of Thailand Qualification Framework before and after using research-based learning

Testing	\bar{X}	SD	Σz	Σz^2	T
After using research-based learning	4.30	0.37	0.76	0.39	4.674*
Before using research-based learning	3.57	0.52			

* Significant at the 0.01 level

After using research-based learning, the pre-service teachers had ethical and moral development domain higher than before using research-based learning at 0.01 level of significance, as shown in Table 4.

Table 4 Comparison of ethical and moral development domain before and after using research-based learning

Testing	\bar{X}	SD	Σz	Σz^2	T
After using research-based learning	4.48	0.38	0.59	0.44	10.080*
Before using research-based learning	3.90	0.52			

* Significant at the 0.01 level

After using research-based learning, the pre-service teachers had knowledge domain higher than before using research-based learning at the 0.01 level of significance, as shown in Table 5.

Table 5 Comparison of knowledge domain before and after using research-based learning

Testing	\bar{X}	SD	Σz	Σz^2	T
After using research-based learning	4.20	0.42	0.94	0.51	14.038*
Before using research-based learning	3.26	0.65			

* Significant at the 0.01 level

After using research-based learning, the pre-service teachers had cognitive skills domain higher than before using research-based learning at 0.01 level of significance, as shown in Table 6.

Table 6 Comparison of cognitive skills domain before and after using research-based learning

Testing	\bar{X}	SD	Σz	Σz^2	T
After using research-based learning	4.16	0.42	0.90	0.63	10.858*
Before using research-based learning	3.26	0.65			

* Significant at the 0.01 level

After using research-based learning, the pre-service teachers had interpersonal skills and responsibility domain higher than before using research-based learning at 0.01 level of significance, as shown in Table 7.

Table 7 Comparison of interpersonal skills and responsibility domain before and after using research-based learning

Testing	\bar{X}	SD	Σz	Σz^2	T
After using research-based learning	4.36	0.39	0.70	0.47	11.347*
Before using research-based learning	3.66	0.66			

* Significant at the 0.01 level

After using research-based learning, the pre-service teachers had analytical and communication skill domain higher than before using research-based learning at 0.01 level of significance, as shown in Table 8.

Table 8 Comparison of analytical and communication skill domain before and after using research-based learning

Testing	\bar{X}	SD	Σz	Σz^2	T
After using research-based learning	4.11	0.48	0.83	0.55	11.536*
Before using research-based learning	3.27	0.59			

* Significant at the 0.01 level

Discussion

1. Overall, students' learning behavior according to qualification framework was at a high level before using research-based learning but after using research-based learning, students' learning behavior was shown at the highest level a significant increase from previous level. From the result, it was in accordance with the principle of research-based learning. This teaching processes was for students to know how to do research, how to solve problems, how to analyze along with how to seek the knowledge by themselves which were the learning processes to support student-centered concept (Sinlarut, 2014). Also, the research was used for the

researcher development. In doing so, the researchers should be willing to ask for knowledge, be creative researchers and dare to make comments. Consequently, the researchers could be inquisitive, enthusiastic, and reasonable, resulting in academic progress. Finally, it could increase the capability of solving problems for people to have a better quality of life (Pitiyanuwat and Bunterm, 1994). Not only is this in accordance with the research-based learning as stated above but the advantages of this learning management is also for students to have a proper process of obtaining self-seeking knowledge. When learning by research methodology, students could improve multiple skills which consisted of posing questions skill, recording data skill, selecting skill, thinking skill, analysis skill, data interpretation and conclusion including analysis skill to propose findings from research (Sinlarut, 2014). As a result of the above, students' learning behavior according to qualification framework was at a higher level after using research-based learning.

2. Students had learning behavior level according to qualification framework after using research-based learning at a higher level before using this research-based learning at the 0.01 level of statistical significance. This is because research-based learning was the learning management that needed students to learn, practice, and discover knowledge systematically and in procedures by themselves. It is a learning-teaching processes that uses a research process to teach the skills necessary for creating circumstance for students to use the research processes as a learning tool, to use research review as a part of teaching content, to use research result as a content for learning, to use research processes to study a content or to use or practice self-research acquire any research skills (Khammanee, 2012; Sinlarut, 2014). Moreover, while learning, students could improve any skills which consisted of posing questions skill, recording data skill, selecting skill, thinking skill, analysis skill, data interpretation and conclusion including analysis skill to propose finding from research. Furthermore, research was the part of learning that students could improve their thinking in systematically, reasonably and scientific method (Kamket, 2012). It affects students to have learning behavior according to qualification framework in a higher level before using research-based learning. Whether it be learning in part of virtue, which is concerned with emotions, the mind, ideas, and behavior; it is believed that it could change ideas or increase knowledge, and change behavior. Teachers needed to be

specific in terms of depth of learning for students to gain a higher level of intelligent skill and relationship skill a necessary skill for doing anything. Learning in terms of relationship skill is a social method that includes interaction with other people in situations, that includes learning for numerical analysis skill, communication and applying information technology. The numerical analysis skill was the intelligent and practice processes skill. Communication skill was the intelligent and social processes skill. Lastly, using information technology skill was the intelligent and practice processes skill (Khammanee, 2010). From this research, the result was also in line with the study from Tammachart (2012) which found that the experimental students had the average scores of research-based knowledge, problem-solving skill and having characteristic of researcher in higher score than control group at the 0.05 level of statistical significance.

Suggestion

1. Based on this study, research-based learning can develop the pre-service teachers learning outcomes through the Thailand qualification framework in all domains. Considering with learning behavior domains found that ethical and moral development domain had the highest score because the samples were student teachers.

2. The Implementation of Research-based learning, it should be noted that the nature of the course can be designed in accordance with the principles of research-based learning or not. And what kind of learning will take to adapt to the nature of each course. Including the concentration level of the learner in getting involved in the study.

3. Research-based learning is at the heart of higher education and is applied more compared to other levels. The instructors should plan and prepare for each phase of the course, and administrate the self-research.

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