

Model of Developing Teachers Competencies in the Bangkok Metropolitan Administration Base on Active Learning Design for Students to Thailand 4.0

Nantawan Kaewchote, Chatchayapha Wattanathum

College of Teacher Education, Phranakhon Rajabhat University, Bangkok, Thailand

Email: nantawan.k@pnru.ac.th

How to cite this paper: Kaewchote, N., & Wattanathum, C. (2022). Model of Developing Teachers Competencies in the Bangkok Metropolitan Administration Base on Active Learning Design for Students to Thailand 4.0. *Creative Education*, 13, 1564-1576. <https://doi.org/10.4236/ce.2022.135098>

Received: April 11, 2022

Accepted: May 24, 2022

Published: May 27, 2022

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Abstract

This research aimed to 1) synthesis and develop competencies' development model for teachers in the Bangkok Metropolitan administration based on active learning to develop learners in Thailand 4.0, and study competencies development model for teachers in the Bangkok Metropolitan administration efficiency based on active learning to develop learners in Thailand 4.0. The research instruments consisted of form document analysis interview's questions, 2) active learning questionnaire, and 3) evaluation form of competencies' development model for teachers in active learning. The research result found that 1) the result of building competencies' development model for teachers found that the model consisted of 4 elements: first, the analysis of academic contents and indicators to assessment, second, designing of skills integrated learning, third, guideline of learning management design focus on skills integrated learning management, and the last, choosing learning resources and technology, applying google application in teaching and learning, and competencies' development model for teachers that related to active learning in highest level according to defining criteria. 2) The result of applying competencies development in learning plan found that teachers know and understand after using it. The teachers evaluate aptitude of applying competencies' development in learning plan found that teachers know and understand after using it. The teachers evaluate aptitude of applying competencies' development model in active learning of teachers in the Bangkok Metropolitan administration to develop learners in Thailand 4.0 in highest level.

Keywords

Competency Model, Active Learning Design, Learners in Thailand 4.0

1. Introduction (Heading 1)

Thailand has been driven by technology, creativity, and inventions toward “wealth, stability and sustainability”. The main focus is the production for the service sector. Even more importantly, Thailand needs to have its own inventions; thus, the reformation of students’ learning is needed in education. The country needs to step into “education 4.0” concretely, which corresponds with Thailand’s strategic frame work for 20-year period (2017-2036). Schools and related government offices must create a plan that supports the 6 aspects of national strategic plan: stability, competitiveness, investment in human resources, creating equality in opportunities, and reduction of social inequality, as well as having adaption skills to access new technology and inventions. These are considered the success in the upgrading of national quality of education. It is also learning from actual problems or “problem-based learning” and development of education under the framework Thailand 4.0 toward the twenty-first century. It begins with training students to learn by themselves. Teachers are transformed into coaches. Integrative learning, interdisciplinary, connecting knowledge with imagination and transforming it into a concrete concept so that learners can gain the skill they desire by seeking knowledge on their own from all kinds of educational media, both printed and digital ones. It emphasizes the research skill and information technology, as well as seeking and verifying accuracy of information (Phonakorn, 2017; Al-Freih, 2021). All of the above rules and responsibilities of teachers should have skills in designing their learning activities to meet the needs of learners and be suitable for the modern age. The issues in Thailand’s education are as follows: curriculum and learning process, production and development of teachers, production and development of workforce and research, assessment and development of education of workforce and research, assessment and development of educational standards, education management, and education ICT. There are also issues that affect teachers and learners: the number of learning periods which shows that Thai student’s study too much, insufficient number of teachers to be in charge of classes in every level, and schools that have not passed standard assessment. These problems push the Ministry of Education to make plans to drive schools all over the country, in very educational district under all authorities. Many offices participate in the making of teacher development projects such as EASTEM project, Kindergarten Teacher System Development Project, Public School Project, 10 Education Strategic Transformation Project, and training courses for school executives and teachers (Phraokaew, 2018). From the above reasons, there have been supervision and coordination that enable teacher—producing institutes and teacher development institutes, as well as the whole faculty and education personnel, to be prepared and strengthened, in order to have teachers that the country expects for the 21st century. They must be developed in terms of quality and potentials to become teachers who are completely devoted to students, with required learning skills and the desire for lifelong learning (Bawane & Spector, 2009). They should have abilities and expertise in their work, in-

cluding knowledge, skills and good attitude toward jobs that emphasize skills more than knowledge (Keeratikorn, 2014). The focus of teaching should not be the subject, but the lives of learners. Student—center concept must be seriously applied. Teachers should develop their own profession and gain acceptance from the society (Terblanché, 2015). Teachers should be highly—valued persons who care about the benefits of the public. They should always do research to increase their knowledge and should have compassion toward students (Al-Freih, 2021). However, in reality, teacher is a profession that most Thai people look down on. The crisis of low—quality education has always been criticized. Children and youth grow up with education that lacks quality among strong competitions in the world. Learning achievement in every grade level is lower than the normal range. It reflects that the efforts to reform learning are still not successful. We urgently need to have teacher development process that produce teachers with high—ability and a good heart (Educational Research and Development Office, 2016). The Ministry of Education should promote and support full—cycle teacher development projects such as teacher coupon as well as emphasize to have quality education in the classroom, teacher must be developed so that they can, in turn, develop learners to have real learning achievement (Ministry of Education, 2018). The purpose of this research was to synthesize and develop the teacher performance development model under Bangkok metropolitan administration in design on proactively manage learning to develop learners to the Thai era. 4.0 and study on the effectiveness of the teacher performance development model under Bangkok Metropolitan Administration on forward proactively manage learning to develop learners in the Thai era. 4.

2. Literature Review

2.1. Teacher Development

According to the new educator preparation rules outlined workforce ready competencies in content, creativity, communication and culture. Teacher development has been an ongoing process (Secretary-General Office of the Education Council, 2008) said that there are various forms of teacher and education personnel development. They can be classified as self—learning, training by producing courses for permanent teachers and education personnel, observational study, furthering one’s education, academic events, and teacher exchange between training institutes and education institutes. In each of these categories, problems that affect the quality of learners to be lower than expected were found. This is reflected from the study of teacher development. There were analyses of data on status of teacher development. There were analyses of data on status of teacher development as a whole system, as well as suggestions. There was guidance for teacher development in order to improve learner’s quality. Important matters were discovered about actual conditions and problems of teacher development. This corresponding with the results of the research by Office of the Basic Education Commission, such as the lack of supervision and fol-

low—up in teacher development. Many institutes provide trainings but they do not have teacher database and lack coordinated planning so the development provide trainings but they do not have teacher database and lack coordinated planning so the development process is not effective. There was overlap planning so the development proves is not effective. There was overlapping of work and that was not cost—efficient. There was no mechanism for pushing teacher profession to become a higher vocation. There was no management system and observation to give assistance to teacher is still weak. Many teacher development courses do not meet the needs of teachers. There is also insufficiency of analysis. Conditions of the problems in teacher development cause the process to be unresponsive to the needs of teachers. The method and content in teaching are outdated and there is a lack of inventions that the teachers need. The development process does not really relate to classroom teaching; it focuses more on theories instead of hand—on practice; therefore, teachers cannot apply what they learn from trainings in reality. Most of the training courses are short and their results did not change how teacher arrange learning activities in classroom. These trainings often take teachers away from their classes and that badly affect their teaching, especially in schools that does not have enough teachers for every grade level. There is no ongoing follow-up process. It turned out that teachers only participate in these courses just to give their reports to the principals. There is no procedure for checking whether the trainings have been adapted into practice or the results extended in classroom. Permanent teachers in school still lack quality in arranging learning activities based on the curriculum and in using media technology. Furthermore, it was found that the current method of teacher development is severely problematic and does not help produce good and skillful teachers. This format of teacher training cannot teachers to have necessary abilities for arranging learning activities according to the education reformation ([Secretary-General Office of the Education Council, 2013](#)). Future more, the background and significance above on teacher's competencies should be suitable for the local area and designing and conducting mixed methods. Therefore, the researcher is interested to study the format of teacher development under the authority of Bangkok Metropolitan Council. The data used for creating the format comes from the body of knowledge of teachers who have been trained, the constructing of kindergarten teacher system, and observation of classes taught by student teachers. Problems were found and a guidance was developed as a method for improving personnel in education institutes, equipping them with necessary competencies, and ensuring that there are master teachers for each body of knowledge in order to design proactive learning activities to develop learners in the age of Thailand 4.0. The concepts discovered from the study were used to establish strategic policy to develop personnel in basic education institutions, so that they have the competencies of master teacher and can design more proactive learning activities in the future. Thus, this research aims were to competencies development model for teachers to arrange active learning activities on synthesize and develop competencies development model for teachers in Bangkok

Metropolitan Administration based on active learning toward Thailand 4.0 with study the efficiency of competencies development model for teachers in Bangkok Metropolitan Administration based on active learning toward Thailand 4.0.

2.2. Conceptual Framework

Study competencies development models based on active learning for teachers in Bangkok Metropolitan Administration, in service area of Phranakhon Rajabhat University. The population and sample were 1) interviewed the executives and teachers that have been trained in active learning, student teachers of Phranakhon Rajabhat University who were trainees having vocational experience in 4 schools in the service area of the university. 2) The group to be given questionnaire. Sixteen teachers who have been trained in active learning and were supervising student teachers from Phranakhon Rajabhat University who were during vocational training in schools in the service area of the university in the first semester of academic year 2020. The process models were developed by study the context, philosophy, and learning management policy of Bangkok Metropolitan Administration. Study current actual conditions in arranging learning activities, as well as problems and obstacles found in arranging learning activities. The model from interviews and questionnaire surveys given to teachers who have been trained in active learning and were supervising student teachers of Phranakhon Rajabhat University who were during vocational training in schools in the service area of the university. 3) Create the prototype model for the development of competencies in teachers under Bangkok Metropolitan Administration based on active learning to develop learners toward Thailand 4.0. 4) Check the appropriateness of prototype model for arranging active learning activities. In addition, phase 2 was focus on develop of competencies model based on active learning activities for teachers under Bangkok Metropolitan Administration, in the service area of Phranakhon Rajabhat University.

3. Methods

3.1. Population and Sample

The population used in this research consisted of teachers who supervised students from Elementary Level Teaching Department who were during teacher vocational experience training in 4 schools in the service area of Phranakhon Rajabhat University in the academic year 2020. The sample used in this research consisted of 16 teachers who supervised students from Elementary Level Teaching Department who were during teacher vocational experience training in schools in the service area of Phranakhon Rajabhat University in the second semester of the academic year 2020. They were selected by purposive sampling.

3.2. Model on Development Process

The model development process involves of 4 models were 1) study the context,

philosophy, and learning management policy of the schools. Study current actual conditions in arranging learning activities, as well as problems and obstacles found in arranging learning activities. 2) Teacher and students during vocational experience training collaboratively developed the model based on active learning, and adjusted if to match the context of school, teachers and students, in order to design the model 3) make the competencies development model for teachers under Bangkok Metropolitan Administration and check the appropriateness of the competency's development models based on active learning. In addition, the variables Studied were included of the independent variable was competencies development model based on active learning for teachers under Bangkok Metropolitan Administration to develop learners toward Thailand 4.0. While dependent variable is efficiency of competencies development model for teachers that has been developed as the research framework in **Figure 1**.

3.3. Methodology

Administration based on active learning to develop learners to Thailand 4.0. The study plan consisted of 2 phases. The first phase was studying the competencies model for active learning-based classroom activities for teachers under Bangkok Metropolitan Administration in the service district of Phranakhon Rajabhat University. The second phase was developing competencies model for active learning-based classroom activities for teachers under Bangkok Metropolitan Administration in the service district of Phranakhon Rajabhat University. The second phase was study on competencies model for teachers was used tools collecting of data form and the information extracted from documents and related research and questionnaire for teachers who have been trained in active learning. While, the steps used in creating the tools were involved of study related documents and research papers to find appropriate information for creating the data form, data form creation by using the information from related documents and research papers, ensuring that they are consistent with indicators and competencies for active learning-based classroom activities used by the teachers. Present the form to be checked by experts for content validity and IOC (Index of Item Objective Congruence). The data form was improved according to the suggestions of the experts and used the form to collect the data for the research. The questionnaire was created by using the following Improve method and checks the quality of the tool as following study documents and research papers related to the creating of questionnaire. The created questionnaire was check teacher's competencies of active learning, using the content from and analysis. Present the questionnaire to the experts for checking content validity and IOC. The questionnaire that receives IOC of 0.5 or higher, according to the suggestions by the experts, was printed and gives to the targeted group. In addition, the data were collecting following steps: Gather the information related to indicators of teacher's competencies in active learning. The outcome of knowledge that related to indicators of teacher's competencies in active learning were recorded

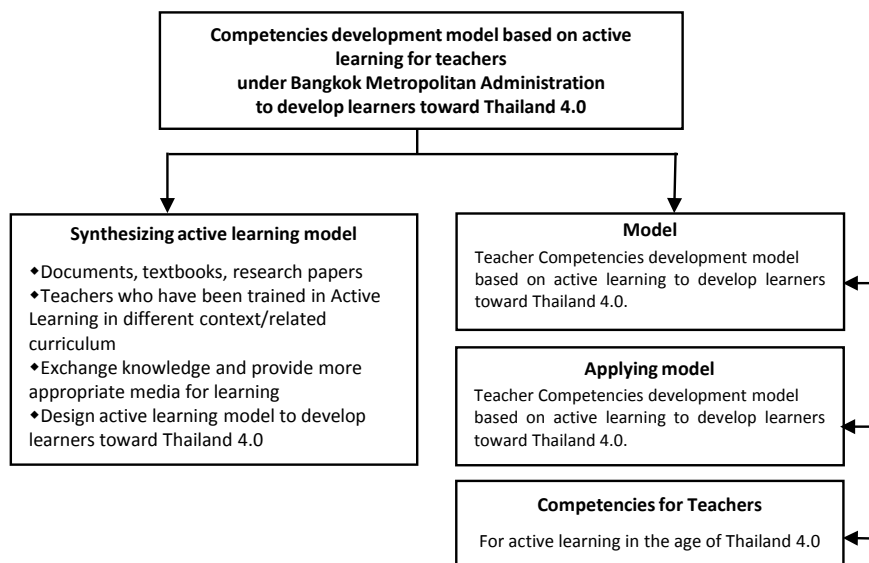


Figure 1. Competencies development model for teachers in the Bangkok Metropolitan.

and analyzed the data form to establish the indicators of teacher's competencies in active learning were recorded and analyzed the data form to establish the indicators of teacher's competencies in active learning. In addition, information by asking the qualified persons about indicators of teacher's competencies in active learning was also collected from the teachers who had been trained in active learning. The questionnaire with the target group who provide the data were analysis on the content from studying. The questionnaire with the target group who provide the data were analysis on the content from studying related documents and research papers concerning indicators of competencies in active learning from teachers in Thailand and in other countries and confirmatory factor analysis by used software package. While the competencies model for teachers, using the following steps:

- 1) Study related documents and research papers, as well as the data from the questionnaire concerning the competencies of active learning of teachers under the Bangkok Metropolitan Administration who have been trained in active learning.
- 2) Develop the model for competencies of active learning, using the data from Phase1.
- 3) The drafted model was presented to 3 experts for their evaluation, so that it can be used in the development of active learning competencies of primary school teachers under Bangkok Metropolitan Administration.
- 4) Use the approved competencies development model with primary school teachers and adjust it to match the context of each teacher.
- 5) Teachers receive competencies development model and use it in their classrooms.

3.4. Procedure of Creating the Research Tools

The researcher has created the tools to be used in the study and also find out the

quality of the tools by using the following steps:

- 1) The method of creating the model for competencies development in active learning of teachers under Bangkok Metropolitan.
 - a) Studying related documents and research papers, as well as the data collected from the questionnaire.
 - b) Create the model from a).
 - c) Present the model to the experts to find out content validity and IOC.
 - d) The model is given to the teachers to be applied in designing active learning lesson, according the context of each teacher.
 - e) Build the tools for assessing the model during the trials in classroom and present them to the expert to find out content validity and IOC.

3.5. Data Analysis

- 1) Analyze the competencies model for active learning of primary school teachers to get the lesson plan designs that are suitable for each teacher under Bangkok Metropolitan Administration.
- 2) Analyze the assessment of the above competencies model by finding the means and standard deviation through the use of package software.

4. Results

The results of phase 1 presented by point, as follows:

- 1) Active learning approach by Bangkok Metropolitan Administration for educational policy in academic year 2019 focuses on 5 matters: promoting learning activities by using ICT (SMART Education) and supporting the allocation of appropriate and good-quality technology; supporting the use of active learning approach; support the use of student-center approach and applying knowledge in real life; promoting learning of foreign language for communication, and promoting life skills and vocational skills. In active learning approach, the emphasis is on learning about teamwork through the different forms of PLC process, such as work-based learning, project-based learning, activity-based learning, research-based learning and problem-based learning.
- 2) The results from interviewing and using the questionnaire with the executives and the teachers who have been trained in active learning for the building of competencies model for teachers under Bangkok Metropolitan Administration, in particular the 8 selected teachers from 4 schools, can be described by each aspect. For teachers, it was found that the teachers were able to keep to their schedule in using their lesson plans and they applied teaching techniques and method learned from training. For content, it was found that the teachers prepared the content before arranging classroom activities, making them consistent with the learning standards and indicators, as well as the objectives. The content was adjusted to increase participation of students. For learning activities, it was found that the teachers support the students to synthesize, analyze and apply the knowledge in real life. They were encouraged to write summaries from

what they had learned. Lecturing-based learning was reduced and group activities were emphasized. For media and teaching equipment, it was found that BMA had provided media and equipment for the teachers but not in sufficient amount. The media and equipment lack stability. For evaluation and assessment, it was found that the teachers have problem in connection and consistency during the active-learning evaluation that is in line with the learning standards and indicators. For learners, it was found that students in each class were different. Some classes were in bi-lingual program and some classes were not. Students lacked the access to different things and lack concentration in class. For Problems and obstacles in teaching, it was found that the teachers did not have enough time to develop themselves in arranging classroom activities and did not have enough facilities that enable them to do so.

3) The results of checking appropriateness of the model for active learning show that the teachers in these 4 schools give suggestions and opinions on the use of the model in the training of active-learning approach, in terms of teaching method, integration, techniques, technology and evaluation, as follows: Thai language Subject Group: teaching demonstration of randomly pick a verb and using body gesture to convey the meaning of the verb, the use of role plays teaching method. Mathematic Subject Group: producing three-dimension geometric shapes, finding out surface area of geometric shape in the video. work-based learning (Mathematics). Science and Technology Subject Group: Teacher Development Project in Technology, the use of QR Code to study the data by the topic, producing tests by using google from, and searching for worksheet from Facebook. Art Subject Group: composing songs using major scale. Career and Technology Subject Group: producing tie-die fabric (handkerchief, shirt), mobile learning with student participation. Health Education and Physical Education: work-based learning by using games. Foreign Language Subject Group: work-based teaching (WBT), work-based learning (WBL) Pull up 3D shapes. Integrative Group: academic subjects are the foundation, consisting of Thai language and local language, History, Music, English Vocabulary, Comparison of old and contemporary music, group work, integrative teaching in Moral School Project.

4) The results of improving and adjusting active learning model according to the suggestions of the experts can be summarized from the executives and the teachers who have been trained in different forms of active learning show that the model was ability to analyzed and can adapted in educational institutions, as follows: a) Wat Trai Rattanaram School (Chuen ChuJai Raat U-thit School)—They used project-based learning that emphasizes student's self-learning such as searching for information on the internet through one's own mobile phone, searching for information through different media, and using KPA to evaluate students workshop. b) Baang Bua School (Peng Tangtrongchit Witthayakarn)—work-based learning, searching for information by oneself, integrating subject groups, using story-telling technique in Thai language class, and using six thinking hats in teaching. c) Baan Khlong Bua (Iam Saeng Rote)—Using 5 Es in the method of

teaching, which consisted of step one “engagement”, step two “exploration”, step three “explanation”, step four “elaboration” and step five “evaluation”, integration of many subject groups. d) Khlong Kluer School—group work-based learning and project-based learning, which uses student-center approach and gives opportunity for students to help each other withing a group, indicator-based learning, observing students while working on worksheet or assignments in groups and filling out the observation form. Form the analysis, it was found that active learning aims to let the learners work on something by themselves. Related theories are Bloom’s Taxonomy, Four Pillars of Education, 4H-Head, Heart, Hand, Health. Examples of such activities include integrative activity and specific activity such as those that are consistent with “moderate hour, more knowledge” policy (Bureau of Academic Affairs and Educational Standards, 2016).

Phase 2: The results can be presented as follows:

1) the competencies model in active learning for teachers was found to be composed of 4 elements. The first one is the analysis of learning standards and indicators toward assessment. The second one is the design of integrative-skills learning. The third one is the model for designing learning activities which emphasizes on integrative-skills learning. Finally, the fourth element is the selection of learning resources and technology and the applying of Google app in classroom learning activities.

2) the study of opinions from the experts concerning the model of teacher’s competencies in active learning can be divided into 6 categories:

a) The ability to choose teaching method in active learning in order to seek the solutions for problems found in teaching and learning activities.

b) The feasibility of applying active learning model and the possibility that learners will be able to retain what they have learned in their long-term memory.

c) The model of active learning, which was found that it is best to focus on activities that teachers can do hand-on practice and build their own knowledge.

d) The content for active learning approach, which was found that it is best to choose the content corresponding with the objectives of learning and to pick the content that was satisfied by the learners.

e) Required elements for active-learning classroom activities that consist of the design of learning units and active-learning lesson plans, and f) the evaluation of active-learning model should be done with the entire process in arranging the activities, using a variety of evaluation methods and allowing several related persons to do the evaluation.

The p2. Designing and Building Competencies Model for Teachers

The establishment of the compositions in active-learning model include the title of the model, the, condition of the problems and the needs for solution, principles of the model, objectives of the model, content of the model, activities of the model, as well as the media, learning resources, approaches, evaluation,

and tools.

As for the producing of data-gathering tools to be used during the trial of the model, the form for interviewing the experts was created in 2-part structure: personal information of the interviewee and opinions of the interviewee. The interview form was checked for IOC, appropriateness, the language use in the questions, and content validity by the research team and was improved as necessary. Then it was used as a data gathering tool.

3) Evaluating the Draft of Competencies Model for Teachers

The results were as follows: a) evaluation results of the model draft: We have found 2 aspects. The objectives of the model have the same average result of 4.48, so it is considered highly appropriate. However, the evaluation and the assessment of the model received the highest appropriateness score, as well as the problems and needs, topics of the model, and activities of the model, which are at the highest appropriateness level, at an average of 4.55 - 4.67. When consider the appropriateness of the model draft, the total average is 4.61, so the model has the highest appropriateness. b) The results of IOC assessment of the draft of competencies model for teachers in active learning show that all elements receive scores at moderately appropriate level. Every step of the model received IOC score between 0.60 - 1.00. The suggestion from the experts was that the focus should be on the method of arranging these learning activities. This comes from the same concept—allowing learners to have the most important role in their own learning. The researcher used the suggestion to improve the draft of the model as following aspects: a) concepts that will be used in developing active-learning model, b) objectives of active-learning model, c) establishing the elements of active-learning model, d) establishing the procedure of active learning model, e) readiness of the teachers, f) direction of learners toward active learning, g) learners learn by hand-on practice, h) teachers promote active-learning behavior, i) 360-degree evaluation of learning, and j) establishing learning outcomes of learners.

4) Conducting trials of the competencies model for teachers

The results of evaluating the appropriateness of the model by putting it to use in the 4 schools: Wat Trai Rattanaram School (Chuenchujairat U-thit), Baang-bua School (Phengtangtonjit Witthayakarn), Baan Khlong Bua School (Iam Sangroj) and Khlong Kluer School can be presented in 2 aspects. The model's overall clarity and appropriateness is at the highest level, at 4.61. It is appropriate to use this competencies development model for teachers who are interested in active learning.

5) Feedback from Using Competencies development Model

Received Topics: a) KPA indicated in the objectives, b) teaching approach in the age of Thailand 4.0, c) the use of video and technology, d) designing learning activities, e) teaching method, f) examples of technology such as the design of Google form and others, and g) focusing on thinking skill. Using the model: a) establishing calendar, b) establishing content and learning activities, c) natural learning that leads to self-learning, d) heart-to-heart meetings, e) design learn-

ing activities by focusing on group work, f) use technology such as PPT, together with video and games, g) example of growing vegetables by based learning approach, h) evaluate correspondingly with the designed bases, such as using observation form and checking worksheet, i) creating a single-form worksheet by collaborating, and j) focusing on group process and forming groups by interest.

Suggestions: 1) focusing on natural approach to learning, 2) establishing conditions and agreements with the students before running an activity systematically, and 3) focusing on task-based learning

5. Discussions

1) In synthesis, most teachers under Bangkok Metropolitan Administration have been trained in active learning process. The researcher used data form and questionnaire with them and found that they had diverse styles of student-center teaching approach with depth, using learning resources, intelligence, the environment and information technology to improve the quality of learning, which led to authentic assessment. The techniques used varied; most of them focused on P (Performance Assessment) and A (Attribute Assessment).

2) In the development of teacher's competencies, the model was developed by analyzing the data in the data form and in the questionnaire, separating them into 4 matters: analysis of leaning standards and indicators, the design of integrative learning, as well as the analysis of related learning standards, and the selection of learning resources and technology, such as the use of Google Application in teaching and learning.

3) In studying the effectiveness of the model, the results showed that the teachers can apply the process and the design of active learning with the learners. Consequently, there was a swift of role when the learners change from being totally passive into being active and building their own knowledge from experience.

Suggestions

1) The competencies model in active learning for teachers under Bangkok Metropolitan Administration in order to develop learners toward Thailand 4.0 should focus on activities and allow teachers to work on and create their own knowledge. It is advisable that one should study several models from offices related to education management.

2) The competencies model in active learning for teachers under Bangkok Metropolitan Administration in order to develop learners toward Thailand 4.0 should be crystallized in educational institutions and everybody should be able to use it concretely. The competencies model in active learning for teachers under Bangkok Metropolitan Administration in order to develop learners toward Thailand 4.0 should consist of "Best Practice" of each educational institution, so it can be exchanged between institutions.

Acknowledgements

This research was funded by Phranakhon Rajabhat University. The researcher would like to thank Phranakhon Rajabhat University and various departments including Institute of Research Development Phranakhon Rajabhat University, College of Teacher Education, Education Program in Curriculum and Instruction and Education Program in Elementary Education that promotes and supports research. Thank you to the teachers of Bangkok schools in the service area of Phranakhon Rajabhat University for providing information in their work, various document forms, as well as facilitating every aspect of this research to be successful.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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