



Faculty of Education, Burapha University, Chonburi, Thailand

## Teacher Development in the 21<sup>st</sup> Century

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This is to confirm that Miss Rinradee Papanai is the author/co-author of the below mentioned proposal(s), which is/are accepted to be presented at Educa 2011- Teacher Development in the 21<sup>st</sup> Century

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Miss Rinradee Papanai is author/co-author of the following accepted contribution(s):

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(Assoc.Prof.Dr.Montree Yamkasikom )

Dean, Faculty of Education, Burapha University

Educa 2011- Teacher Development in the 21<sup>st</sup> Century

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ตามที่ท่านได้นำเสนอบทความวิจัย เรื่อง Development of An Instructional Model Based Learning Study Approach for Teacher Students to Enhance Teaching Design Ability to Solve Learning Problems. ในที่ประชุมวิชาการเพื่อนำเสนอผลงานวิจัย “Teacher Development in the 21<sup>st</sup> Century” การประชุมวิชาการนานาชาติ EDUCA 2011 ในวันที่ ๑๓ ตุลาคม พ.ศ. ๒๕๕๔ เวลา ๑๑.๐๐ – ๑๑.๓๐ น. ห้อง MR ๒๑๓ A ณ ศูนย์นิทรรศการและการประชุมนานาชาติไบเทค บางนา กรุงเทพมหานคร นั้น คณะศึกษาศาสตร์ ได้นำบทความวิจัยเรื่องดังกล่าวลงใน Proceedings “Teacher Development in the 21<sup>st</sup> Century”

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# DEVELOPMENT OF AN INSTRUCTIONAL MODEL BASED ON LEARNING STUDY APPROACH FOR TEACHER STUDENTS TO ENHANCE TEACHING DESIGN ABILITY TO SOLVE LEARNING PROBLEMS

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## Abstract

The objectives of this research are 1) to develop an instructional model based on Learning Study Approach for teacher students to enhance teaching design ability to solve learning problems; and, 2) to study the efficiency of an instructional model based on the Learning Study Approach. The sample group used in the study comprised thirteen fourth year teacher students of Computer Education Department, Faculty of Technical Education, Rajamangkala University of Technology Thanyaburi. Data was collected in two phases. The first phase being when the students undergo instruction of the eleven developed learning management plans in the second semester of the academic year 2010. The second phase being when the teacher students, in their fifth year and during the professional traineeship program at educational institutions in the academic year 2011, were evaluated for their ability to design teaching models. One group time series research plan and quantitative data analysis were used with one-way ANOVA (repeated measures) and qualitative data analysis for the content before arriving at the conclusions.

The findings of the research are as follows:

1. The instructional models developed comprise three stages of the instructional process: 1) preparation, 1.1 creation of knowledge and understanding through learning, 1.2 development of capabilities prior to implementation in actual context; and, 2) learning planning and implementation in actual context; and, 3) evaluation, summarization and report of implementation outcome.

2. The preliminary data from the evaluation of the ability of teacher students in the design of teaching models suggests that they exhibited a positive tendency of development in terms of teaching model design, learning management planning and instructional activity implementation. The three areas evaluated were 1) the ability to achieve diversity in the design of teaching models in a structured manner in order to solve learning problems of individual students; 2) the ability to write learning management plans; and, 3) the ability to implement instructional activities to solve learning problems.

**Keywords:** Learning Study Approach, Teacher Students, Teaching Design Ability

## Introduction

The National Education Act B.E. 2542 (1999) and Section 24 of its amendment the Third National Education Act B.E. 2553 (2010) deal with the implementation of a learning process which requires the schools to arrange for contents and activities which correspond with the interests and aptitudes of the students. This law encourages instructors to create a learning environment which is facilitating and contribute to the learning ability of the students as well. Further, Section 52 of this act stipulates that the ministry needs to promote a system for the development and enhancement of teachers and education personnel in order to increase teaching efficiency and to gain more respect for this profession.

A relevant research literature by Wichit Suratruegchai and Chalanda Punpanich (2003, 85-94) on the Opinion of students on the student teaching practicum management of the Faculty of Education, Burapha University states that teacher students would like their mentor to advise them on instruction management, on how to correct the mistakes they have made and on how to write lesson plans. From researcher's experience as the instructor for the Teaching Practice Course and as the mentor to the teacher students of Rajamangkala University of Technology Thanyaburi during the academic years 2004 and 2006, researcher has discovered that most teacher students were frustrated prior to the actual teaching practice as they feared they were not sufficiently capable to teach. They were not confident in their knowledge in their own field and they were not confident in themselves as an instructor nor were they confident in their ability to conduct activities pertaining



to the teaching, to prepare for the teaching, to write lesson plans and to conduct learning outcome evaluation. This is particularly true for the use of diverse measurement and evaluation tools to correspond with the learning objectives of each lesson.

These problems are consistent with the data from other study and research literatures on Learning Study Approach, for instance, the research of Hong Kong Institute of Education (HKIEd) by Pang, M.F (2009) during 2007 and 2008, titled 'Learning to Teach: Pre-Service Teachers' Experience of Learning Study' which summarized the obstacles experienced by teacher students as: 1) lack of experience in the writing of lesson plans and in the effective use of those plans, particularly where difficult topics are involved; 2) lack of teaching techniques; 3) lack of knowledge in the subject contents, the curriculum or the learning circumstances of the learners; 4) lack of research skills (e.g. test design and data analysis) (The World Association of Lesson Studies (WALS) International Conference 2009). Therefore, Researcher has developed the interest to improve the teaching model designing ability of teacher students prior to their actual teaching practice at the educational institutions.

### **Objectives**

1. To develop an instructional model based on the learning study approach for teacher students to enhance teaching design ability to solve learning problems
2. To study the efficiency of an instructional model based on the learning study approach

### **Relevant theory, principle and concept**

#### **Conceptual approach to developing instructional model**

Researcher has studied the principal and the idea of the Learning Study Approach of Pang and Marton (2005) and found this approach to be one that encourages the teachers to arrive at an answer on their own through hands-on practice as a researcher. With the learning study approach, teachers are able to alter their instruction based on research findings with learning theories as a foundation. The joint efforts of the teachers through the learning study approach would eventually lead to improved learning achievements of the learners. The learning study approach is one of flexibility and can be fine tuned to each group of learners and instructors, regardless of whether the teachers are from the same or different schools. The members are of different expertise but they all share the same level of in the group's hierarchy. They would convene each week to work together over a period of around ten to twelve weeks. Additionally, the learning study approach can be applied to enhance the instructional capability of the teachers and elevate the teaching profession as a whole as well. Therefore, it is an appropriate choice for the development of permanent teachers, education programs for teacher students or advanced education programs of a university.

The stages of the learning study approach can be summarized as follows (Pang and Marton, 2005):

1. 'Choosing the object of learning' while taking into consideration practicality and value to the development between lessons or throughout the educational program with key emphasis on theories.
2. 'Ascertaining students' pre-understandings' by reviewing the ideas of the learners or by testing the ability of the learners prior to the learning to alert the teachers of the critical aspects or the critical features affecting the learners to help with the next selection of objectives.
3. 'Planning and implementing the lessons' using the Theory of Variation in the designing of the lessons. Upon implementation, the teachers should observe the progress and the incidents occurring in the classroom for subsequent analysis of implementation outcome.
4. 'Evaluating and revising the lessons' by asking all learners to complete a post-learning test and by randomly interviewing learners following the conclusion of each lesson to determine how well the learners have improved their capabilities and what their learning achievements are.
5. 'Reporting and disseminating the results', as well as preparing documents and reports in accordance with the objectives, processes and outcome from the implementation of the learning study approach implementation.

Runesson (2005) states that the Learning Study Approach creates a cyclical process which can be summarized as follows:

1. The learning study approach attracts teachers and researchers together to jointly determine learning objectives.
2. Members of the group would jointly develop lesson plans and use the Theory of Variation to design learning circumstances for the learners.
3. One teacher who is a member of the group would carry out the first lesson and record it with a video. Learners are tested immediately after the lesson.
4. All members of the group would review the recorded video and analyze the test performance of the learners. In the case where the expected learning achievement is not found to be satisfactory by the group, the lesson would be strictly complied to and carried out again.



5. The next member of the group would use this newly developed plan in a class and record the session with a video then test the learners. The video is then reviewed and a new plan is developed as before. This cycle would go on until all teachers have carried out their teaching.

Researcher could summarize from the above Learning Study Approach that the Learning Study Approach is a structured process where classroom teaching and learning is investigated using operational research practices. The teachers of the same course and the same class level would work with researchers on the development of lessons. The processes involved are as follows:

1. Defining the issues and general objects of learning by targeting those which are learning problems or obstacles of the learners.

2. Ascertaining students' pre-understandings with a test prior to the lesson or by an interview to determine how knowledgeable or skilled the students are of the subject being taught.

3. Choosing object of learning that reflects the learning problems or obstacles of the learners.

4. Planning and implementing by designing the instruction of the teachers around the Theory of Variation and by allowing all group members to observe the class carried out using that lesson plan and subsequently revising the plan.

5. Evaluating and revising the lessons by evaluating all learners and randomly interviewing some learners after the lesson concludes in order to determine their learning achievements.

6. Reporting and disseminating the results at seminars or by publication in various journals as resources for interested individuals or groups.

The above process can be illustrated as below:

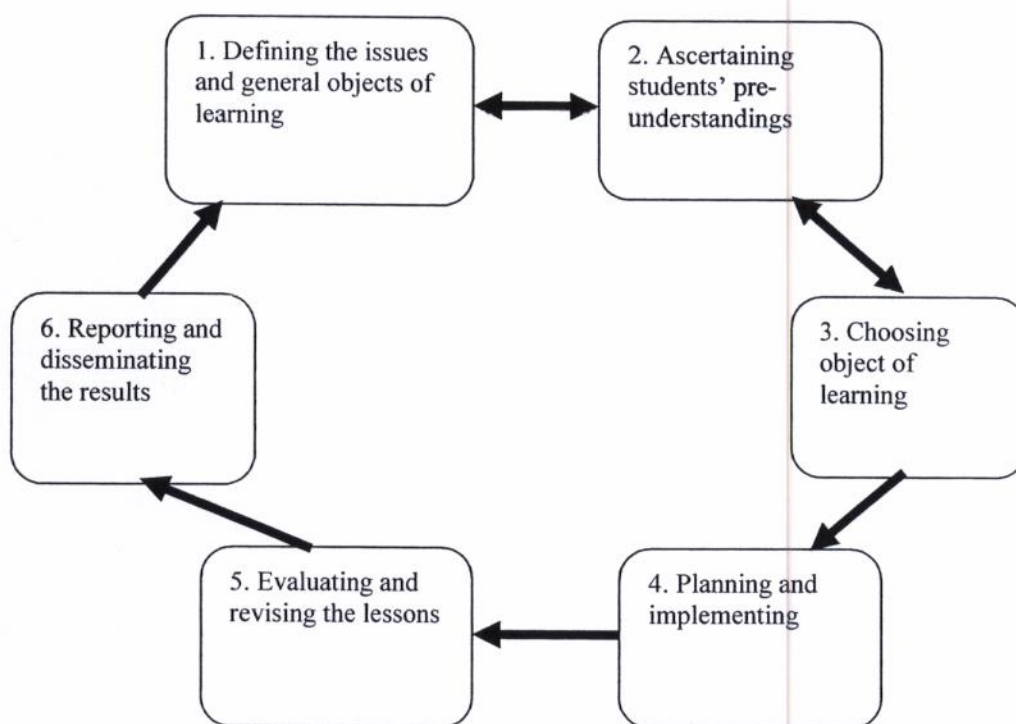
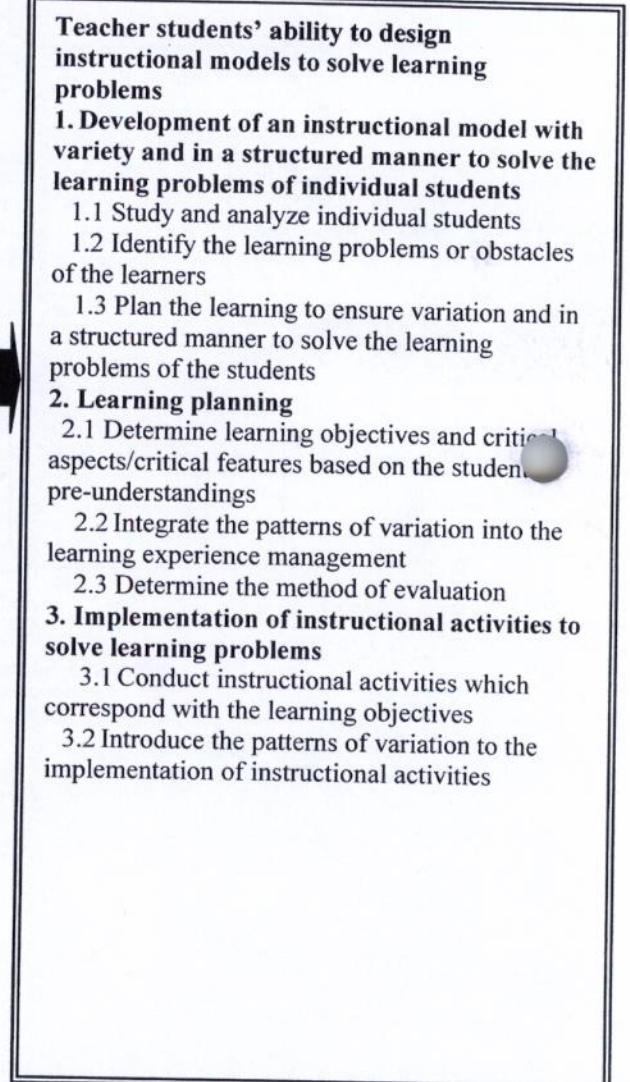
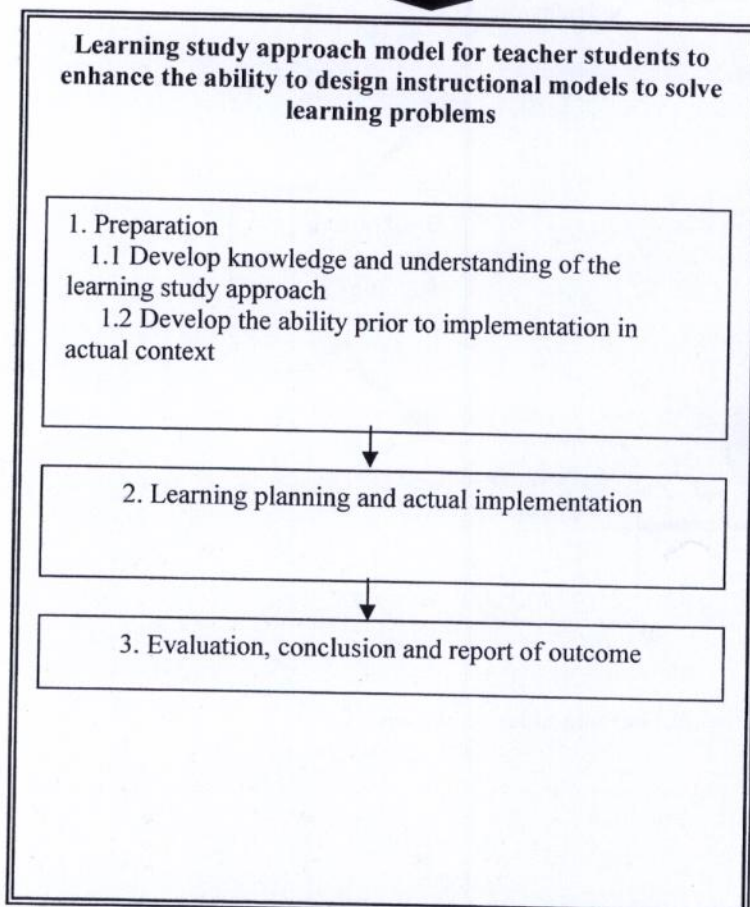
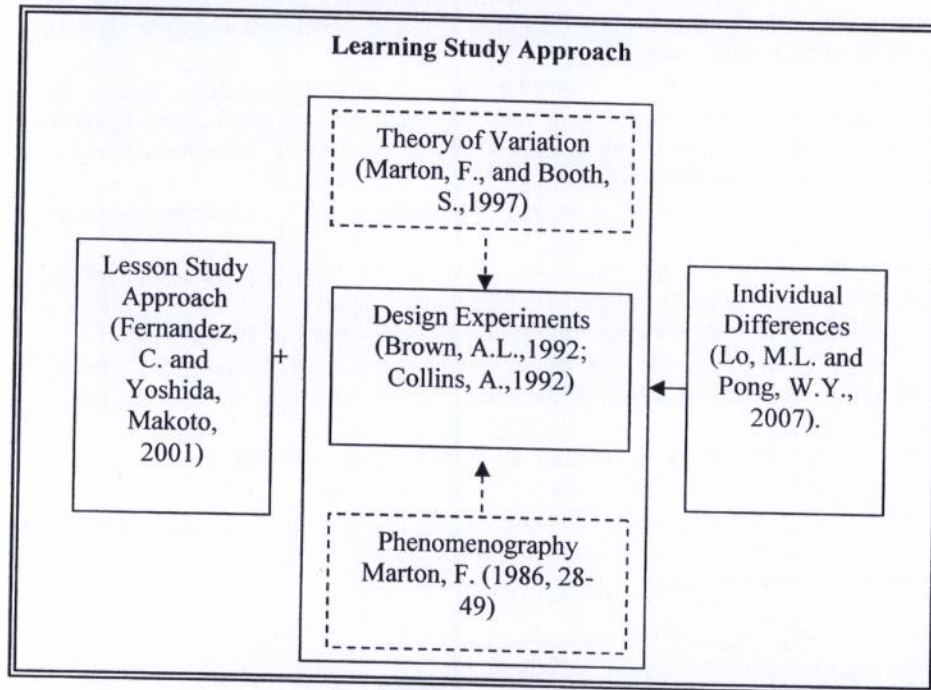


Diagram 1 Summarizes of Learning Study Approach

Diagram 2 Research conceptual framework







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### **Abstract**

The aims of the research are to 1) develop an instructional model based on Learning Study Approach for teacher students to enhance teaching design ability to solve learning problems; and 2) study the efficiency of an instructional model based on Learning Study Approach. The research will be taken 4 phases and now progress in phase 3; will be to evaluate the efficiency of an instructional model. The sample of this study is the 4 year teacher students, Program in Computer Education, Faculty of Technical Education, Rajamangala University of Technology Thanyaburi. There are 13 teacher students being tested by way of the one-group time series design. The study divided into two periods; the first period is to construct the knowledge for teacher students based on the model developed at 4 months with 11 lesson plans. The following period is to evaluate the teaching design ability of teacher students (the same group) at 5 months (now in progress). The research instruments to evaluate teaching design ability are the evaluation form consist of 1) the various and systematic of teaching design ability to solve individual learning problems; 2) lesson plan writing ability; and 3) learning management to solve learning problems. The quantitative data analysis of one-group time series using statistical to compare the difference between pre and post scores of experiment by One-Way ANOVA: Repeated Measurement. The qualitative data analysis using content analysis to identify the targets of research and classification issues that related to result of the model implementation and then conclusion.

#### **The findings from the research were as follow;**

1. Developed the instructional model has three stages of teaching process: 1) Preparation; 1.1 to construct knowledge in Learning Study Process; 1.2 to develop the ability to perform in real context; 2) Learning Plan and Implement in real context; and 3) Evaluation, Conclusion and Report.

2. Evaluate the efficiency of the instructional model based on Learning Study Approach by collecting some data from teaching observation of the teacher students and found at the third phase that teacher students tended to express more in three areas: 2.1) The various and systematic of teaching design ability to solve individual learning problems; 2.2) Writing lesson plan ability; 2.3) Learning management to solve learning problems. Those can be helpful to enhance teaching design ability for the teacher students.

**Key Words:** Learning Study Approach, Teacher Students, Teaching Design Ability, Solve Learning Problems