

**THE DEVELOPMENT OF TRAINING MODEL FOR TEACHERS
CONCERNING TEACHING AND LEARNING OF SCIENCE
FOR GRADE 7-9 IN UDON THANI PROVINCE, THAILAND**

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1. INTRODUCTION

The professional survival and growth of teachers, is related to the coverage, quality, content and delivery of in-service training programmes. Thus, the need for in-service teachers has to change significantly in relation to the changing educational system in Thailand. Changes in curriculum, transactional techniques, evaluation system, educational management and in particular, the teaching and learning approach and the teachers' desire for refreshing and updating their knowledge becomes the major challenges for the educational planner and the administrator. Hence, the researcher has selected a problem related to in-service education programme by developing a training model.

1.1 Statement of the Study

The research aims to study **“The Development of Training Model for Teachers concerning Teaching and Learning of Science for Grade 7-9 in Udon Thani Province, Thailand.”**

1.2 Objectives

1.2.1 To develop a training model for teachers concerning teaching and learning of science for Grade 7-9 in Udon Thani Province, Thailand.

1.2.2 To use the training model.

1.2.3 To evaluate the efficiency of the training model through (i) finding out achievement before and after the training, (ii) studying satisfaction of the teachers after the training, (iii) observation of teachers teaching as per the training model (Follow up), (iv) views of teachers about implementation of the training model (v) ascertaining effectiveness of teaching through the training model by the students, and (vi) perception of the teachers about the training model.

1.3 Variables

1.3.1 Independent Variables: The training model for teachers concerning teaching and learning of science for Grade 7-9 in Udon Thani Province, Thailand.

1.3.2 Dependent Variables:

1.3.2.1 Achievement of the teachers from the training concerning learning and teaching of science.

1.3.2.2 Satisfaction and perception of the teachers towards the training.

1.3.2.3 Effectiveness of teaching through the training model: Teachers' and students' views.

1.4 Population and Sample for the Study

The study will be conducted in lower secondary schools in Udon Thani Province (Thailand). The population of the study includes 126 science teachers out of which 30 science teachers teaching science to students of Grade 7-9 will be selected randomly for the study.

1.5 Tools

Following tools are prepared by the researcher to develop the training model and to evaluate its appropriateness and efficiency:

- 1.5.1 Questionnaire for need assessment of training.
- 1.5.2 Questionnaire for evaluating the training model.
- 1.5.3 Questionnaire for evaluating the training manual.
- 1.5.4 Achievement test for evaluating the knowledge of teachers.
- 1.5.5 Questionnaire for evaluating the satisfaction of the teachers with the training.
- 1.5.6 Observation schedule for observation of the teachers and students while teaching and learning was conducted in the classes.
- 1.5.7 Questionnaires for evaluating the opinion of the teachers towards the implementation and effectiveness of teaching and learning strategies in schools.
- 1.5.8 Interview schedule to find out the effectiveness of the model by the students.

1.6 Procedure

Firstly, the researcher would study the models for teacher training for the synthesis of the suitable model to be used for science teachers in Udon Thani Province, Thailand. Secondly, the model would be proposed to the supervisor and co-supervisor for consideration and improvement. Thirdly, five experts would evaluate the model and the model would be improved using suggestions from the experts and the supervisors. Fourthly, construction and development of tools for finding out effectiveness of the model. Fifthly, the training would be set up for 30 science teachers in Udon Thani Province, Thailand. Sixthly, the evaluation of the training model would be conducted which include pre-test and post test for their achievement, knowing satisfaction of the teachers using the questionnaire. The follow up study would be taken by observing the teachers teaching in the classrooms, and also the teacher and student interviews would be conducted. Finally, the report of the investigation would be prepared for the thesis submission.

1.7 Analysis of Data

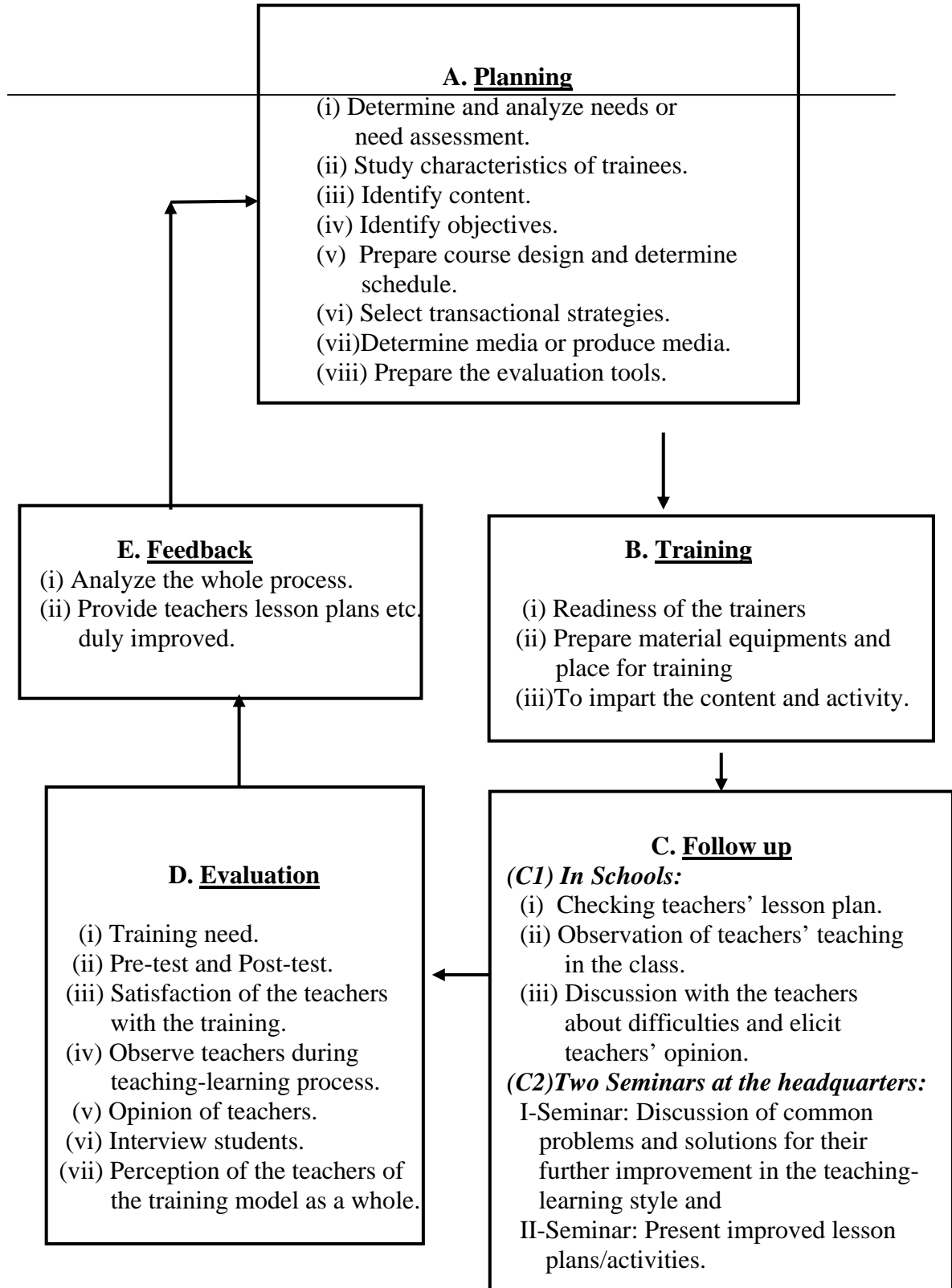
Quantitative approaches for analyzing data were used in the present study. Frequencies and percentages were used for determining information about personal data and interview to gather the opinion of students about the model. Mean and S.D. (Standard Deviation) were used for (i) satisfaction of teachers after training, (ii) observation of teachers teaching as per the training model, (iii) opinion of teachers about implementation of the training model, and (iv) Perception of the experts/teachers about the training model, Whereas t-test value was used for comparing pre-test and post-test.

2. CONCLUSIONS AND FINDINGS

The analysis of the data provided following conclusions:

Various stages of the developed training model and its efficiency are shown in Figure 1

Figure 1 Training Model for Science Teachers



The following are the findings as per evaluation results about the efficiency of the training model for teachers concerning teaching and learning of science for Grade 7-9 in Udon Thani Province, Thailand.

1. Result of the achievement test prepared for the science teachers shows that the post-test mean score on achievement of the science teachers was $\bar{X}=24.80$ while the pre-test mean score was $\bar{X}=19.40$ which means that the post-test mean score was found to be higher than the pre-test mean score with statistical significant difference at .01 level.

2. Satisfaction of teachers with training as a whole was at the “Satisfied” level ($\bar{X}=4.14$)

3. Observation of the science teachers on various aspects of teaching-learning process in the classes showed that as a whole it was “Good” teaching.

4. The opinion of the science teachers to apply the knowledge as a whole to teaching and learning in schools was at the “Agreed” level.

5. Results of interviews with the students show that the teachers encouragement helps them to participate in planning, asking questions, analysis etc., science teachers are more effective in teaching and learning process and give chance to the students to use the laboratory equipments in their practical class and also provide the materials for teaching and learning process. The students developed positive attitude toward the science subject and they can apply their knowledge to everyday life. The students could do their work in a group more freely rather than doing it individually and most of the students could search their own learning sources by themselves.

6. The perception of the science teachers about various stages of the training model as a whole was at the “Strongly Agree” level ($\bar{X}=4.55$).