

CHAPTER V

SUMMARY, CONCLUSION AND

SUGGESTIONS

CHAPTER V

SUMMARY

In this chapter, a brief summary of the study is presented under relevant headings. This chapter concludes with implications of the study and suggestion for further research.

5.1 NEED AND RATIONALE OF THE STUDY

A constructivist learning environment is characterized by learners constructing knowledge out of their experiences which are associated with pedagogical approaches that promote active learning. (Afolabi & Akinbobola, 2009). Constructivist learning environments place much premium on students' prior knowledge which is also referred to as alternative framework or alternative conception. According to Neo and Neo (2009), a constructivist learning environment play an important part in achieving meaningful and retentive learning since it allows students to improve their problem solving, creative thinking and critical thinking skills.

According to Akinbobola and Afolabi (2010) in a constructivist learning environment, the teachers' role is to serve as the facilitator of learning in which students are encouraged to be responsible, autonomous, and construct their own understanding of each of the scientific concepts. Hence, the activities are learner-centered, democratic, and interactive. The teacher provides students with experiences that allow them to use science process skills. According Thorndike (2000), the teachers' responsibility in a constructivist-learning environment involves taking into account students' prior knowledge and understanding the nature of the concepts to be learned and the learning outcomes expected, conceptual demands made on the child and the strategies available to the teacher.

It is important for teachers to create learning environments, which ensures that students play an active role in their own learning process and access knowledge through investigation, and questioning. Constructivist teaching strategy has been known to create learning environments where the learners are actively involved.

Keeping the above-mentioned facts in view, the pre-service trainee teachers need to know about Constructivism as the most widely accepted pedagogical approach and the latest developments that have taken place in education. As the pre-service trainee teachers are offered 45 days of a glimpse into their professional lives, they are also trained for applying constructivism in their classroom teaching, in which 5E model has surfaced as one of the latest practice for the interns (B. Sc. B. Ed. VII Semester and B. Ed. II Year) of RIE, Bhopal of the batch 2013-14. Internship program in teaching was conducted for duration of four

weeks for B.Sc. B. Ed. and six weeks for B. Ed. In such a context, it is pertinent to know the attitudes that pre-service teachers developed on 5 E Model of teaching and learning. In addition, it is of utmost important to understand their experiences with regard to the easiness in creating and implementing the learning situations based on 5 E Model. At the same time, it is more than important to understand the challenges that they might have faced in creating and implementing learning situations.

Significance of any research depends on its applicability to bring educational reform. The present study is significant to teacher educators and pre-service trainee teachers to improve upon the mistakes that might have occurred during internship. In addition, the findings of the study may help to overcome the dilemmas faced by the present pre-service trainee teachers in a constructivist teaching- learning approach. This research will help the institute to improve upon the present pedagogical practices of the trainees teachers and may become wide spread across the nation.

5.2 STATEMENT OF THE PROBLEM

The problem for the present study was worded as:

Attitude of pre-service trainee teachers towards 5E model of creating learning situation: Achievability and Challenges”

5.3 OPERATIONAL DEFINITION OF TERMS

1. **5E Model:** The 5E's is an instructional Model based on the constructivist approach to learning, having five phases of teaching: engagement, exploration, explanation, elaboration and evaluation, where each phase has a specific function and contributes to the teacher's coherent instruction and to the learners' formulation of a better understanding of scientific and technological knowledge, attitudes and skills.
2. **Attitude:** Refers to predisposition to perceive feel or behave towards specific objects in a particular manner. However, Attitude for this study is defined as the feelings of the trainee teachers towards the 5E Model of creating learning situations.
3. **Achievability:** The extent to which the pre-service trainee teachers perceive that his/her 5E model learning situation has been created and implemented successfully may be defined as achievability in this proposed student.
4. **Challenges:** The extent to which a pre-service trainee teacher perceived the challenges she or he encountered while creating and implementing 5E model learning situations may be defined as challenges in this proposed study.

5.4 OBJECTIVES OF THE STUDY

The following were the objectives of the present study:

1. To study the attitude of pre-service trainee teachers towards 5E model of creating learning situations and influence of attitude of pre-service trainee teachers on preparing and implementing learning situations through 5E Model.
2. To study the achievability and challenges that pre-service trainee teachers encountered while preparing and implementing learning situations through 5E Model.

5.5 DESIGN OF THE STUDY

A research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data (Kerlinger 1986).

The present study is both qualitative as well as quantitative, a mixed method in nature. Purposive sampling was used for selection of pre-service trainee teachers of B. Sc. B. Ed. and two years B. Ed. The pre-service trainee teachers' attitudes have been scored and categorized into positive, negative or neutral (favorable, unfavorable or indifferent) the relationship between the attitude on 5E model and the pre-service trainee teachers' narratives on achievability and challenges that they have encountered during their internship was established.

5.6 SAMPLE OF THE STUDY

During Internship in teaching, 5 E Model is used as a teaching learning approach which is peculiar to RIE Bhopal. As Internship for pre-service trainee teachers, take place during 2nd year for B. Ed. and during 7th Semester for B.Sc.-B. Ed. with a specialization in Biology and Chemistry. The entire classes mentioned above are taken as a sample that amounts to 60 participants. In order to understand each case as what achievability and challenges that they have faced while creating and implementing learning situations.

5.7 TOOLS USED IN THE STUDY

A self-constructed scale was used to study the attitude of pre-service trainee teachers on 5E model in accordance with Likert scale (i.e. five-point scale). In order to understand the achievability and challenges, interview schedule was developed.

Attitude scale

A scale was prepared to study the attitude of pre-service trainee teachers towards 5E model of creating learning situations and influence of attitude of pre-service trainee teachers on preparing and implementing learning situations through 5E Model. It consisted of 21 test items and instructions directing the pre-service trainee teachers to tick the box in option of starting from strongly agree to strongly disagree.

Interviews

In-depth interviews were conducted with the participants to understand their attitude on achievability of creating and implementing 5E Model learning situation and challenges that they had encountered in the process. There were 15 planned and open ended questions based on the components of 5E model.

5.8 PROCEDURAL DETAILS OF THE STUDY

The researcher personally met with the participants of B. Sc. B. Ed. and two year B.Ed. for conducting the study and established rapport with them.

Attitude scale

This tool was administered in the very beginning of data collection so the researcher has the idea about participants' attitude towards 5E model of constructivism. Prior to the administration of the tool, the participants were explained about the test items, which they suppose to answer. The significance of the tool and the necessary instructions were made clear to them.

In-depth interviews

After having the idea about participants attitude towards 5E model of constructivism in-depth interviews were conducted. They were given sufficient time ranging from forty-five minutes to one hour to answer to the queries of the researcher. The answers to the questions were recorded in an audio recorder to be used for further analysis.

5.9 STATISTICAL TECHNIQUES USED

The statistical techniques used in the study for analyzing the data are given as follows:

1. For studying the attitude of pre-service trainee teachers towards 5E model of constructivism, data were analyzed by computing mean and standard deviation respectively.

2. For studying the achievability and challenges that pre-service trainee teachers encountered while preparing and implementing learning situations through 5E Model, were analyzed by taking in-depth open-ended interviews.

5.10 MAJOR FINDINGS OF THE STUDY

The following findings come out from the interpretation of data presented in the previous chapter.

1. A clear majority 68.33 % (41) of pre-service trainee teachers had a neutral view towards 5E Model of creating learning situations. Whereas a few 20 % (12) number of pre-service trainee, teachers held a negative attitude, even fewer 11.66%(7) were in support of 5E Model of creating and learning situations.
2. During the phase Evaluate, the participants faced a number of problems like insufficient time allotment, lack of proper acquaintance-ship with Rubrics, confusion in understanding specific terminologies in rubrics, inability in preparing rubrics due to lack of sufficient pre-internship training.
3. As the learners were used to behaviorist approach of teaching –learning they would respond to question of evaluation in a bookish manner despite being discouraged of the same. The participants also confess to not being able to ask application level question or domain specific question.
4. The participants also encountered a problem in evaluating the students when they would give collective answers. It took a lot of discipline and patience for the learners to learn and wait for their turn.
5. The participants faced a problem in evaluating divergent and critical thinking, however impressive it might be, as most of them evaluated the learners in the achievement test manner.
6. Evaluation was a problem when the class consisted of more than forty children.
7. Some of the students had communication problems, as they were too shy to interact with the different teachers. This created a problem in oral evaluation of student.
8. Rubric was every participant's bone of contention as it was very difficult to be executed in the Indian context of classrooms consisting of fifty to sixty learners.

- **Problem with Physical infrastructure**

- ❖ 5E Model requires at times the use of multimedia and ICT. Some of the schools to which the participants were sent to did not have this facility freely available.
- ❖ Traditional classroom have the row wise seating arrangement, which posed a significant problem for the participants while making groups.
- ❖ Learners, not used to the constructivist classroom setting, were bound to the teacher for instructions, and could not function properly at all without the participant's instructions and continuous disciplinary monitoring.
- ❖ Time proved to be the biggest issue in implementing the 5E model of creating learning situations. The traditional 35 to 40 minutes of classroom time was mostly wasted away in forming groups or explaining instructions. Most of the participant pointed out to the rarity of being able to complete a single lesson with all 5Es implemented in the same period.
- ❖ The regular teachers were not very supportive of the new approach of teaching-learning as they felt inferior to it, and were of the opinion that it isn't a very practical approach in the Indian context where to finish the syllabus was the paramount for a teacher.

5.11 EDUCATIONAL IMPLICATION OF THE STUDY

5E Model is the model, which is based on research-oriented constructivist learning theory and experimental activities. 5E Model, while including students in activity at every phase, encourages learners to constitute their own concepts. It includes skills and activities that increase curiosity for research, satisfy learners' expectations, and make learner focus on an active research for information and understanding. Learners use their previous knowledge in discovering new concepts for the concepts to gain a meaning.

Present study is significant to teacher educators and pre-service trainee teachers to improve upon the mistakes that might have occurred during internship. In addition, the findings of the study may help to overcome the dilemmas faced by the present pre-service trainee teachers in a constructivist teaching- learning approach. This research will help the institute to improve upon the present pedagogical practices of the trainees teachers and may become wide spread across the nation.

5.12 DELIMITATIONS OF THE STUDY

The study has yielded some important and interesting findings. However, the study has some unavoidable limitations arising out of the constraints of human and physical resources and the time of the investigator. In view of the research constraints under which the study was conducted, it remained confined to the following:

1. Only the Regional Institute of Education, Bhopal was selected for the study.
2. Only B. Sc. B.Ed. VIII sem. and two year B.Ed. pre-service trainee teachers were selected for the study.
3. Challenges faced in teaching science (namely chemistry and biology) subject only were considered.

5.13 SUGGESTIONS FOR FURTHER STUDIES

Looking into the constraints under which the study was conducted, the findings do not warrant wide generalizations. It is therefore, felt that replication of this study, on a larger sample, and is requisite to arrive at precise results. However, studies may be undertaken on the following topics:

1. This study can be conducted on pre-service trainee teachers of B. A. B. Ed course.
2. This study can be conducted on pre-service trainee teachers of B. Sc. B. Ed in subjects other than biology and chemistry.
3. This study can be conducted longitudinally on a batch of next five to ten final year pre-service trainee teachers.
4. Similar study can be conducted on pre-service trainee teachers of other Educational Institute.
5. This study can be conducted taking gender as a variable.
6. A comparative study between pre-service and in-service trainee teachers can be undertaken to know about their perceptual differences over 5E Model of creating learning situation.