4.1 INTRODUCTION

This chapter deals with the procedure adopted to conduct the investigation. The entire chapter is been discussed under various subheadings such as rationale for the study, statement of the problem, objectives formulated, operation and measurement of variables, sampling procedure, constructions of tools and validations techniques of data collection and statistical techniques employed therein.

4.2. METHOD ADOPTED

The major objective of the present study is to inculcation of self confidence for developing teaching competence among teacher trainees. Experiment is a systematic and logical method of hypothesis testing under carefully controlled conditions. It helps to find out the effectiveness of one method of instructions over the other or not. Hence the experimental method, the most important from the strictly scientific point of view was found to be the most appropriate method for the study and is adopt to inculcation of self confidence for developing teaching competence among the teacher trainees.

4.3. DESIGN OF THE STUDY

According to Best (1977) “experimental method is a description and analysis of what will be or what will occur, under carefully controlled conditions”.

The Research design is the conceptual structure of the research procedure. It provides planning on selection of subjects, data gathering devices, data analysis techniques in relation to objectives of research.
The Experimental method is clearly for determining the casual's effect of an isolated, single variable on dependent variable. It provides a systematic and logical way for answering the research questions. It is to establish cause and effect relationship between variables. This method is considered to provide for a high degree of control over extraneous variables and the manipulation of variables. It helps to test hypotheses of casual relationship between variables. It also permits drawing inference about casuality.

Experimental research enables the researcher to go beyond description and prediction beyond identification of relationships to partial determination of what causes them. The immediate purpose of experimentation is to predict events in the experimental setting. Based on the above advantages of experimental research, the investigator has adopted an experimental design for the present investigation.

4.4. STAGES OF THE STUDY

**Phase -I**
- I Week
  - Selection of Sample, Tool construction, Validation

**Phase –II**
- II week
  - Pre assessment of Teaching competency and Self confidence among student teachers.

**Phase -III**
- III, IV, V, VI, VII weeks
  - Treatment - self confidence building model implementation

**Phase –IV**
- VIII WEEK
  - Post – assessment of self confidence and teaching
4.5. VARIABLES OF THE STUDY

The present investigation is an attempt to determine the 'Inculcation of self-confidence for developing teaching competence among teacher trainees'. Self-confidence strategy is an independent variable in the present investigation. Teaching competency is the dependent variable in the present investigation.

4.6. DESCRIPTION OF THE TOOLS

4.6.1 SELF CONFIDENCE INVENTORY

The self-confidence inventory used for the measurement of self-confidence D.T.Ed trainees is the one developed by going through the following research tools.

1. Self –Concept questionnaire(SCQ) by Dr.Rajkumar Sarasat (1988)


From the above scales, the researcher has selected 35 statements and given to experts for opinion. Finally based on experts opinion 30 statements were drawn for administration.

The split –half reliability co-efficient of the inventory as reported in the manual was 0.87. The validity given in the manual was 0.76.
The reliability for the purpose of employment of this tool (SCI) in the present study was established by test-retest method with an interval of one month in the year 2010 for D.TEd students. The reliability coefficient was found to be 0.73.

According to the opinion of ten experts teaching psychology in colleges of education, the items were found suitable for the present sample. Hence the rational validity was established (Appendix – I).

**4.6.2 TEACHING COMPETENCE SCALE**

Competency is an improved modern term applied to the way of doing things in the competency way; the right way to perform a job, the right way to live and work in association and co-operation with others. According to Copper (1973) Teacher competencies are the resultant of attitudes, understanding, skill and behaviour that facilitate intellectual, social, emotional and physical growth in children. During the formation and construction of scale to assess competency in teaching, the investigator revised some relevant information about competencies like teaching competency, teacher competency, characteristics of competent teacher, pre-service training and teacher competency, concept of competent teacher. Some classification of competencies, strategies for evaluation of teaching competencies by functional level, competencies by area of application, source factors affecting teaching competency, based on these information the investigator developed a 'Teaching Competency Scale' with help of educational experts, consists of 5 dimensions with 43 items.
To assess the teaching competence of teacher trainees, a five-point teaching competence rating scale (Appendix –II) developed and validated by the investigator following certain procedures as mentioned below:

a) Consultation of Literature and Experts

The researcher reviewed the relevant literature on the procedures of evaluating the teaching competence of teacher trainees and also consulted experts in the field of teacher education. After gaining the relevant information and suggestions, the researcher being a teacher educator applied her personal experience and felt the need for developing the tool, as the existing tools were varying in nature to administer. A brief description about the importance of rating scale, precautions to be taken to construct it, limitations and the reasons for choosing it are prescribed here under.

b) Rating scales

Rating scales are not tests but they do provide a means of obtaining organized descriptions of behavioural traits from judges which ample opportunity to make the necessary observation. The device is useful chiefly to learn what impression an individual has formed with respect to some specified traits or attitudes upon persons with whom he/she has come in contact with.

Depending on the problem, an individual may be rated by teachers, counselors, employers, colleagues, parents and other who have sufficient contact with the person in question to have formed an opinion upon evidence. Rating scales may be devised for a variety of personality traits such as tact,
generosity, leadership, cooperativeness, resourcefulness, enthusiasm, and many others. Traits may be rated individually. In the construction of rating scale, care must be taken in the following aspects

i. The trait under consideration should be clearly defined so that all judges understand it uniformly.

ii. The degrees of traits must be appropriately demarcated.

iii. Scoring or marketing type scale should be given preference in graphic scales.

iv. Clear instruction should be given to judges.

v. It is preferred that rating is done by many judges so as to reduce the subjectivity through balancing of errors and biases.

vi. The reliability of the rating scales cannot be as high as that of the other devices unless the description of the traits is precise (or objective). Low reliability is also due to judges’ biases.

The problem in obtaining valid appraisals of an individual through ratings is due to two reasons.

i. There are two factors that limit the rater’s willingness to rate honestly and consciously in accordance with the instructions given to him. They are (a) unwillingness to take pains in careful and thoughtful judgments, and (b) the rater often identifies himself/herself with the persons being rated.
There are a number of other factors that operate to limit validity of the ratings. They centre on the lack of opportunity to observe, “the covertness of the attribute, ambiguity of the quality to be observed, lack of a uniform standard of reference, and specific rater biases and idiosyncrasies” (Thordike and Hagen, 1970). The experience of life has built in each individual an assortment of likes and dislikes and an assortment of personalized interpretations of the characteristics of the people. The ratings are subjected to the degrees of the impacts of such internal built of the individual. The above stated limiting factors give rise to the different types of errors. They are:

i. **Leniency error**: Some individuals may rate lower than they should, while some rate higher than what they should. The constant tendency for a rater to rate too high or too low for whatever reasons is termed as leniency error.

ii. **Error of central tendency**: A rater may hesitate to give extreme judgment and this tends to displace individuals in the direction of mean position. This is more common when one rates unfamiliar persons.

iii. **Halo effect**: Rating the individuals in terms of a general mental attitude towards them is known as a halo effect.

iv. **Logical error**: It is a tendency among the raters to give similar rating for traits that seem logically related in their minds.
v. **Contrast error**: It is a peculiar tendency of the rater to rate others in comparison of them with himself/herself on a trait.

vi. **Proximity error**: Adjacent traits on a rating from tend to intercorrelate higher than the remote ones, their degrees of actual similarity being presumably equal.

The errors due to personal bias, halo effect and raters generosity can be reduced by providing proper explanation about the possibility of the occurrence of such errors to the raters and requesting them to be objective while rating. The proper explanation of terms may reduce logical error.

Despite these limitations rating scales are considered to be a very convenient tool for the following reasons:

i. The ratings can be done quickly

ii. The large number of items can be used in a rating scale.

iii. Data can be analyzed quickly.

iv. It is more interesting than any other procedure, and

v. It is more reliable than the check list.

c) **Frame of reference**

The standard Teaching Appraisal guide developed at Stanford University(1972), the Baroda general teaching Competence scale, and the Competency Based and Commitment Oriented Teacher education for quality school education: Curriculum framework for national council for teacher
education (1998) were considered as a framework for reference to develop the tool. The investigator, considering teaching competence as a combination of many skills to be mastered by the teacher trainees by drill and practice, which are observable and measurable, an assessment to be done at the intermediate process stage, in which information about their summative classroom performance is collected, a five-point rating scale was developed.

d) Identification of the Dimensions of Teaching Competence.

1. Planning, Preparation and organization

2. Knowledge of subject-matter.

3. Presentation and classroom management

e) Components and its Indicators of the Dimensions

All the three dimensions of teaching competence were further subdivided into many components. The first dimension includes the components of Planning, Preparation and Organization. The second dimension possesses the component of Mastery in the subject. The third dimension contains the components related to Motivation, Communication, Interaction, and Evaluation and Closure. Further every component was explicitly indicated to enable the teacher educators/supervisors (raters) objectively rate the teaching competence of the teacher trainees under the five-points of very poor, poor, average, good and very good. The continuum was assigned to a numerical equivalent 1, 2, 3, 4 and 5. The highest score for each component is 5 and the lowest score is 1.
The range of score will be minimum 3 and maximum 15 for the first dimension, 1 and 5 for the second dimension, 4 and 20 for the third dimension respectively. Thus the overall score for all the three dimensions of teaching competence ranges from 8 and 40.

Reliability and validity of the Tool

i) Experts opinion: A pre –Try –Out of the Tool

In order to establish, whether the listed items really tallied under the specific category, the items were arranged in a random order and subjected to experts scrutiny. The experts were drawn from the field of teacher education. Based on the experts’ opinion, items, of the teaching competence rating scale were modified. Thus, the face validity was also established.

ii) Pilot study

A pilot study was conducted by administrating the teaching competence Rating Scale consisting of 8 components with 42 indicators to a sample of 50 teacher trainees of J.J Teacher training institute in Pudukkottai district during the academic year 2010-2011. The teacher educators/supervisors (raters) were given necessary orientation and instruction on the method of assessment to be done.

The filled in tools were arranged in ascending order of their scoring. On the basis of the total score, high and low teaching competence groups were formed by considering the top 27% and the bottom 27% respectively. Item analysis was done by using t-test to find out the significance of difference
between the means of the high and low teaching competence groups. The results are presented in the following Table

Table-4.1: Teaching competency rating scale

<table>
<thead>
<tr>
<th>SI. No.</th>
<th>Dimensions</th>
<th>Components</th>
<th>Indicators</th>
<th>High and Low group discrimination values</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Planning, Preparation and organization</td>
<td>Planning</td>
<td>Developing a mind set by the teacher trainees. Reading relevant subject matter. Identifying the knowledge level and ability of the learner. Identifying the special needs and interests of the learner Identifying appropriate strategies and materials.</td>
<td>1.825* 10.523* 11.735* 12.038* 8.316*</td>
</tr>
</tbody>
</table>

Significant at 0.05 level
<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Dimensions</th>
<th>Components</th>
<th>Indicators</th>
<th>High and Low group discriminate t-values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Organisation</td>
<td></td>
<td>Analyzing, synthesizing, sequencing and consolidating the needed information and materials</td>
<td>9.831*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Organizing feasible innovative techniques of teaching to enhance learning</td>
<td>7.720*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Creating a conducive classroom environment</td>
<td>10.042*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Preparing the students well in advance for a new task of learning</td>
<td>5.424*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Instilling confidence in students.</td>
<td>6.527*</td>
</tr>
<tr>
<td></td>
<td>Knowledge of Subject - matter</td>
<td>Mastery in subject</td>
<td>i. thorough knowledge in the subject</td>
<td>13.002*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ii. keeping informed of the latest trends in the subject</td>
<td>12.898*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>iii. depth knowledge in allied subjects</td>
<td>8.739*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>iv. ability to correlate the subject</td>
<td>10.072*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>v. ability to critically evaluate the subject matter</td>
<td>9.863*</td>
</tr>
<tr>
<td></td>
<td>Presentation and Classroom Management</td>
<td>Motivation</td>
<td>i. arousal and sustenance of students interest</td>
<td>8.061*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ii. giving illustrations and telling anecdotes</td>
<td>6.247*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>iii. establishing link between previous knowledge and experience with new learning</td>
<td>10.305*</td>
</tr>
</tbody>
</table>

Significant at 0.05 level
<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Dimensions</th>
<th>Components</th>
<th>Indicators</th>
<th>High and Low group discriminate t-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Communication</td>
<td>presenting materials in a variety of ways and means</td>
<td></td>
<td>10.081* 11.983*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>using appropriate verbal communication</td>
<td></td>
<td>12.976* 11.926*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>using appropriate visual communication for better understanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>using simple language</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>attempting to use e-learning devices</td>
<td></td>
<td>6.025*</td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td>i. initiating thought provoking discussion</td>
<td></td>
<td>7.005* 10.039*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. encouraging and ensuring students' participation in the learning process</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. attending students clarification</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv. involving the slow learners in the learning process</td>
<td></td>
<td>8.965*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>v. maintenance of discipline in the class</td>
<td></td>
<td>5.862*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vi. displaying warmth and enthusiasms</td>
<td></td>
<td>10.046* 6.311*</td>
</tr>
<tr>
<td></td>
<td>Evaluation and Closure</td>
<td>i. employing the traditional and modern techniques of evaluation</td>
<td></td>
<td>1.005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. diagnosing the learning difficulties and achievement of students</td>
<td></td>
<td>6.431*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. offering constructive feedback</td>
<td></td>
<td>8.914*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iv. giving enrichment and remedial programme</td>
<td></td>
<td>10.311*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>v. adopting continuous evaluation and monitoring the progress of the learners</td>
<td></td>
<td>1.829</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vi. revising the main points at the end of the class</td>
<td></td>
<td>9.391*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vii. extending opportunities of further learning</td>
<td></td>
<td>1.068</td>
</tr>
<tr>
<td></td>
<td></td>
<td>viii. creating a sense of achievement in students</td>
<td></td>
<td>6.023*</td>
</tr>
</tbody>
</table>

Significant at 0.05 level
The reliability of the tool was established for KR-20 methods, which worded out to be 0.89.

Besides the content/face validity established with experts opinion, item validity was also established by using t-test (to find out the significant difference means of high and low competence group) The competence obtained by the teacher trainees in practical movement method and it worked out to be 0.83. Thus the tool became reliable for the present study.

**Scoring**

The maximum score for all the three dimensions would be 40 and minimum 8. On the basis of the overall mean score, the teacher-trainees were classified into less competent, competent and more competent by using the procedure.

**4.7. PROCEDURE FOR SELF CONFIDENCE BUILDING STRATEGY IMPLEMENTATION MODEL**

The researcher produced guidelines for student teachers to use to establish a working framework and build a relationship with their peer coach. Our key points were that peer coaching requires:

1. Mutual agreement

2. A commitment to dialogue

3. That self-reflection would be encouraged

4. Awareness of the peer’s potential
5. Sensitive questioning

6. Awareness and empathy

7. Positive listening

8. Celebration of successes.

Researcher felt these were the conditions under which confidence in one’s self can be developed. Greater awareness of self will promote emotional literacy and thus contribute to the progression of students through the course. Much of the literature on peer coaching/co-coaching make similar emphases but there is a lack of exploration of just how the key features of collaboration co-operation and confidence can be developed.

Students have a mentor in school and a college tutor to support them through their teaching practice. However, the purpose of the cognitive coaching for self confidence building was to encourage student teachers to enter into constructive dialogues with their peers that would be supportive and open. Peers self-selected their pairs at the beginning of the course. Coaching guidelines were shared with students and explained alongside a rationale of being involved in a peer coaching project.

Literature supports the notion that it is important for students to understand the processes through which the coaching will work in order for it to be successful.

At this point it was decided that students would keep the same peer coach throughout the year to enable this relationship to develop. An important part of peer coaching is that it is an ongoing process. The students had the opportunity to work together with their peer coaches during 8 hours. These usually involved some
discussion guidelines to aid their conversations and help them to progress their learning. This enabled them to build a relationship with their peer coach before starting their school placements. They were also encouraged to meet during their self-study days and outside of college, which many of them did.

The following sequence (Figure 4.1) summarizes the work of Researcher as it relates to modeling and places it in the context of building Self – confidence through cognitive coaching. Based on the sub processes of attention, retention, production and motivation, the sequence takes advantage of the natural learning process and is designed for Teacher trainees to experience success in using instructional tactics. This sequence could be repeated each semester as new instructional strategies and behavior managements skills become the focus of the professional development units.
A relationship of trust is built between participants. During this stage, the benefits of coaching are discussed and the expectations defined. A pre-conference is conducted to plan lessons and establish a focus for the observation.

The teaching of the coach is observed based on the focus area agreed upon in the pre-conference. Notes are written in narrative or a checklist is utilized.

After the observation, the coach and observing teacher are engaged in self-reflection. The coach thinks about the lesson and formulates possible questions for the post-conference. The observing teacher reviews the notes and draws conclusions.

A post-conference is conducted. The observing teacher shares impressions of the lesson and what it means for their personal teaching.

The dialogue is shifted and focused on the coaching process. The coach solicits feedback about how he/she can assist the observing teacher with implementation of the strategy.

Figure 4.1. Cognitive coaching programme
4.8. SAMPLE OF THE STUDY

In the present study the investigator decides the non-randomized single group design of experiment for the study. The present study being experimental in nature. It was decided to selective the sample of 20 students from JJ Teacher training institute, Pudukkotai district of Tamilnadu state. The pupils of selected class are representative sample of teacher trainees of Tamilnadu, who admitted through management quota. The investigator considered management quota students for the selection of the sample because, the students admitted through single window system and management quota are differ in the following aspects

1. Marks secured in Higher Secondary.

2. Medium of study in school level.

3. Lack in initiative.

Thus the investigator choosen the study group to reach the objective.

4.9. PROCEDURE OF DATA COLLECTION

One Semi structured interview to know the social and demographic profiles of student teachers. Two multi dimensional scales to measure Teaching competency and Self confidence level were administered.

Administration

The Teaching Competence Rating Scale meant to assess teaching competence of teacher trainees were given to the respective optional subject teachers (supervisors/teacher educators). They were requested to rate the teaching competence
of their students only after the completion of the intensive teaching practice. The supervisors/teacher educators were asked to encircle only one numerical value for each component of all the three dimensions with the help of the indicators given in the tool. Time limit was not prescribed to finish the rating.

4.10. STATISTICAL TECHNIQUES USED

In the present study, the relevant data obtained from assessment scores on the pre, and post assessment on teaching competency and self confidence level (Pre and Post assessment) secured by 20 Diploma in Teacher Education, trainees have been analyzed as follows:

A - Descriptive Analysis:

It provides the information about the nature of a particular group of individuals. Mean and S.D was calculated for pre, and post assessment on teaching competency and Self confidence level.

B - Differential Analysis

It provides inferences involving determination of statistical significance of difference among the students with reference to selected variables.

1. Teaching Competency and
2. Self confidence level.

C - Correlation Analysis

Correlation analysis aims at finding out the relationship between two variables. The product moment correlation was used to find the relationship between teaching competency and self confidence. SPSS 20 was utilized to analyze the data.