CHAPTER- IV

METHODOLOGY
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The objectives of any teacher education program should be specified so as to bring about desired change in the teacher behaviour. The curriculum for the Secondary Grade Teachers (SGT) in Tamil Nadu is framed in such a way to impart the specified competencies. At present Competency Based Teacher Education (CBTE) is adopted throughout the country. Competencies must be defined and measured in terms of processes not products i.e. in terms of what teachers do and how do they behave rather than in terms of either what they get pupils to do in class or of what happen to pupils in class or what happen to pupils’ achievement, abilities or attitude.

In English Language Teaching, achieving Communicative Competence is one of the objectives. The Communicative Competence is a highly complex ability which includes grammatical accuracy, intelligibility and acceptability, contextual appropriateness and accuracy. The goal of language instruction is shifted to building up learner’s Communicative Competence. Attempts have been made to teach written English over a period of time, whereas the teaching of spoken English is lagging behind.

Thus the researcher undertook this study with the intention of enhancing the Communicative Competence of the DIET students with special reference to the ten skills through Meta Cognition and Mediated Learning
Experience. In this endeavor both the cognitive and affective aspects of learning are integrated. This chapter deals with

- Scope of the study
- Statement of the problem
- Title of the study
- Definitions of the key terms
- Objectives
- Assumptions
- Hypotheses of the study
- Population
- Sample and sampling design
- Research method
- Research design
- Procedure of conducting the experiment
- Tool for the study
- Tool construction and validation
- Scheme of data collection

4.1 STUDENT TEACHERS OF DIET

The students who have passed Twelfth (10+2 pattern) with a high percentage of marks (above 80%) are eligible to undergo the Diploma in Teacher Education) course for two years. Most of them are from rural areas. They lack communicative skills in speaking though they have studied English as the second language. Communicative Competence is a broader concept
which includes both written and spoken aspects integrating all the four language skills. The student-teachers of the DIET are the future teachers for the primary children up to eighth standard level. Imparting basic knowledge to the children needs a sound knowledge of English and mastery skills in English. Hence a lot of exposure in the phonology of English, Stress and Intonation patterns, Tone and Pitch etc is needed. Mastery of the communicative skills leads to the attainment of Communicative Competence.

4.2 Selection Of The Communicative Skills

Though there are number of oral skills essential for communicative competence, the ten (10) skills are selected. These skills are identified by John Munby as sub skills of the major skills, Listening and Speaking. Moreover the skills are included in the English Language Education curriculum relating Stress, Intonation, Pause, Juncture, Phonemic contrasts. The right knowledge and practice of these skills are considered to be very important. The primary teacher should be role models in their pronunciation, articulation of English sounds. The children imitate their teacher in speaking the second language. In the pronunciation of words, simple commands, classroom interactions, instruction, reading passages and poems. The researcher selected these skills which are very essential elements of the Communicative Competence.

Oral communication is a two way process between a speaker and a listener. The listener interprets the message based on understanding of
language structures and vocabulary used. In addition to language data in the form of grammatical structures and vocabulary, a speaker makes meaning from stress, intonation, pause etc. In a face to face communication the facial expressions and body movements also helps in understanding the message.

**Ability to articulate sounds**

The knowledge of phonological features that contribute to fluency and accuracy in speech are sounds, stress and intonation. English language has its own sound system having 12 pure vowels, 8 diphongs and 24 consonants. Ability to articulate these sounds when they occur in words is highly essential to have clarity in pronunciation.

**Stress**

Stress is an important and special feature of English language. When compared to Indian languages, English is a stress language. Stress is the degree of force with which a syllable is uttered. When English is spoken in sequence some syllables are articulated with greater degree of force and these are known as the stressed syllables.

**Weak forms and strong forms**

There are a number of words in English which have two different patterns of pronunciation. Each pattern of pronunciation differs from the others qualitatively and quantitatively.
Pause

The time taken after the articulation of each tone group is the pause. In the sequential articulation we normally articulate the meaningful units one by one with suitable tone. These meaningful units are known as tone group boundaries. The time taken after the tone group is pause.

Juncture

Juncture refers to the phenomenon of pauses in speech, the pause that we take between two words to make out meaning. It does not refer to transition from one sound to the next within a word, but to transition from one word to the next.

Rhythm

One of the important characteristics of stress in English is that it is a language with a stress timed rhythm. This means that in English stressed syllables tend to occur at regular intervals of time. Thus in the sentence “this is the dress I like” the time intervals between the stressed syllables this, dress and like will be roughly the same. Irrespective of the number of unaccented syllables between two accented syllables between them the time taken will be roughly the same. This gives English its characteristic rhythm.

Intonation

Intonation refers to the pitch variation in connected speech. Falling and rising are the two basic intonation types. A pitch movement from a low to a
high pitch within a single syllable is referred to as a rising intonation pattern. A pitch movement from a high to a low pitch is referred to as falling intonation.

4.3. STATEMENT OF THE PROBLEM

There are several reasons as to why English is to be taught in India such as our inevitable dependence on western technology, diplomatic relations, foreign exchange, global transactions, overseas education and others.

According to 2000 census there are about 9,30,000 primary schools, 4,00,000 middle schools in Tamil Nadu. The only source of educating the students studying in primary and middle schools is the Secondary Grade Teachers (SGT) trained in the DIETs and Teacher Training institutions.

During the In-service programme for the primary teachers conducted by DIET, the researcher has noticed that the teachers themselves lack proper orientation and training in the attainment of the oral competencies. Unless the teachers are properly trained in the spoken skills, they cannot do justice to their job. Thus attainment of Communicative Competence in oral skills is utmost importance of the future teachers. Hence the researcher has selected the problem of enhancing Communicative Competence with special reference to the oral skills such as pronunciation, phonemic differentiation, stress, intonation, accent, rhythm, pause etc.

According to O’malley, (1990) one’s oral proficiency in a language increases by use of Meta Cognitive strategies help learners manage
themselves as learner, the general learning process, specific learning tasks, ‘Learning how to learn’ is the slogan of new millennium. In this paradigm learners will be more responsible for the management of their own learning so that they learn how to learn a language.

Intrinsically motivated people do things for their own sake, rather than for an external reward. A number of researches have presented data to support the notion that intrinsic motivation is superior to extrinsic motivation. One way of helping students to enjoy their language activities and building up their confidence is to explain them what they are doing in the class and why. The affective side of learner is one most important factor on language learning (L. Oxford 1990). It is essential to build mutual trust among the learners and the teachers. The theory of Mediated Learning Experience lays stress on trust, self-confidence and the emotional aspects of the learners.

Considering the cognitive and affective aspects of learning, the researcher has selected the problem of enhancing the Communicative Competence with the help of Meta Cognition and Mediated Learning Experience.

**TITLE OF THE PROBLEM**

**Enhancing Communicative Competence: Effect Of Meta Cognition And Mediated Learning Experience Among DIET Students.**
4.4 DEFINITIONS OF KEY TERMS


**Enhancing:** To intensify or increase in quality, value, power etc., improve, lift, raise the level quality, utility of something which already exists.

**Communicative:** Imparting exchange of information, ideas or feelings. Ready to impart information, having the quality or habit of communication.

Willing to talk to people and give them information.

**Competence:** ability, the state of being competent, the condition of being capable, the state of being legally competent or qualified, power, capacity to do some thing well.

**Effect:** Change, reaction or result that is caused by something.

The result or consequence of an action: the significance or implication of something.

Something that is proved by a cause or agent or result, power or ability to produce a result or efficacy

Something accomplished, caused or proved.

**Meta Cognition:** Thinking about one's own mental processes. The process of cognition that is one aware of: Knowing about the cognition.
Mediated: To serve as a medium for causing or transferring information etc.

To try to find a solution between two or more people who disagree about something.

Learning: Knowledge gained by study or instruction, the act of gaining knowledge, any relatively permanent change in behaviour occurs as a direct result of experience.

4.4.1 Operational Definitions

Enhancing: improving the quality that already exists

Communicative Competence: It is a highly complex activity. Communicative Competence includes both written and spoken aspects. The skills needed for spoken aspects include the knowledge of speech sounds, Intonation, Pitch, Accent, Discourse skills, Stress etc., Ten sub skills of speaking and listening are selected. The Communicative Competence of the subjects is assessed by conducting oral and written test on the ten skills selected for experimentation.

Effect: The term ‘effect’ refers to the intervention of the independent variable to enhance the Communicative Competence of the DIET students.

Metacognition: The term ‘Meta Cognition’ refers to the process of involving the learners in a ‘learner-centered’ curriculum. They are involved in setting, monitoring and modifying the goals and objectives. Learners monitor and
assess their own progress. Learners are made aware of the pedagogical goals and content of the course. They are also actively involved in the evaluation and reflection of their own learning. Meta Cognitive regulation includes a variety of executive functions such as planning, resource allocation, monitoring, and checking and error detection. Pupils with learning difficulties lack Meta Cognitive skills. Hence instructing on Meta Cognitive skills is very important for effective learning.

The level of the Meta Cognition of the subjects is assessed using a scale developed by the researcher which contains twenty five (25) important dimensions and also ‘Self-Reports’ obtained from the subjects.

**Mediated Learning Experience:** The theory of Mediated Learning Experience formulated by the Isralian psychologist **Reuven Feuerstein** (1980), is based on three principles. They are Transcendence, Meaning and Reciprocity. The mediator plays an important role in triggering the innate potential of the learner. Intention is the effort to produce a state to bring about a state of mutual trust and confidence. When the learner is able to understand the meaning of a new stimulus within context, it leads to further enthusiasm and motivation. Transcendence refers to the goal of interaction.

Mediated Learning Experience stresses the motivational and affective aspects which are interconnected. The role of the mediator is to work holistically on creating motivation and affective aspects, trust, feeling of well being, self-confidence, optimism and other positive factors which foster
mediation. The mediator is not concerned with how learner approaches solving the problem. The mediator interprets the significance of what the learner has accomplished. Thus Mediated Learning Experience describes a special quality of interaction between the learner and the mediator (teacher). The level of the Mediated Learning Experience that the students received before, during and after the experiment is assessed with the help of a ‘Scale to assess Mediated Learning Experience’ developed by the researcher which contains the ten important dimensions of Mediated Learning Experience.

4.4.2. ASSUMPTIONS

- The Communicative Competence of the teacher trainees can be assessed.

- The Communicative Competence of the trainees regarding the skills of speaking can be enhanced with the help of Meta Cognition and Mediated Learning Experience.

- Teaching the learners by making them aware of their learning process will help them to improve their Communicative Competence.

- Awareness of the learning programme includes planning, monitoring and evaluation of the learning programme by the learners themselves.

- The Communicative Competence of the learners can also be enhanced with the help of Mediated Learning Experience.
• By inducing self-confidence, self-motivation, interest among the learners, the learning of the skills (speaking) will be enhanced.

• A model incorporating the basic principles of Meta Cognition and Mediated Learning Experience would be formulated to enhance the Communicative Competence of the teacher trainees.

• An intervention programme with the help of the model may enhance the Communicative Competence of the teacher trainees.

• The progress of the learners in learning the speaking skills would be assessed with the help of the tools formulated by the researcher.

• After the intervention programme, the final assessment of the Communicative Competence would be measured.

• The level of awareness towards Meta Cognition would be increased after the treatment.

• The level of awareness towards the principles of the Mediated Learning Experience would be increased after the treatment.

4.4.3. OBJECTIVES

1. To assess the level of Communicative Competence among the teacher trainees.

2. To assess the awareness of the teacher trainees towards Meta Cognition

3. To assess the awareness of the teacher trainees towards Mediated Learning Experience.
4. To identify the principles of Mediated Learning Experience on enhancing the Communicative Competence among the teacher trainees.

5. To identify the principles of Meta Cognition on enhancing the Communicative Competence among the teacher trainees.

6. To develop a model incorporating the basic principles of Meta Cognition and Mediated Learning Experience to enhance the Communicative Competence of the teacher trainees.

7. To implement the model evolved by the researcher to enhance the communicative competence of the teacher trainees.

8. To test the progress of learning of the communicative skills during the implementation.

9. To identify the effect of Mediated Learning Experience and Meta Cognition on enhancing the Communicative Competence among the teacher trainees.

10. To assess the awareness of the teacher trainees towards Mediated Learning Experience and Meta Cognition.

4.4.4. HYPOTHESES

1. There will be significant difference between the pretest and progressive test (I) scores on Communicative Competence among the teacher trainees.
2. There will be a significant difference between the progressive test (I) and progressive test (II) scores on Communicative Competence among the teacher trainees.

3. There will be significant difference between the progressive test (II) and progressive test (III) scores on Communicative Competence among the teacher trainees.

4. There will be significant difference between the pre and post test scores on Communicative Competence among the teacher trainees.

5. There will be significant difference between the pre assessment and the progressive assessment of level of Meta Cognition among the teacher trainees.

6. There will be significant difference between the progressive assessment and post assessment of the level of Meta Cognition among the teacher trainees.

7. There will be significant difference between the pre assessment and post assessment of the level of Meta Cognition among the teacher trainees.

8. There will be significant difference between the pre assessment and the progressive assessment of level of Mediated Learning Experience among the teacher trainees.
9. There will be significant difference between the progressive assessment and the post assessment of level of Mediated Learning Experience among the teacher trainees.

10. There will be significant difference between the pre assessment and the post assessment of level of Mediated Learning Experience among the teacher trainees.

4.5. SAMPLE SELECTION

Primary teacher is one who has to teach the children from I to VIII standard. Though they have studied English as a second language for 12 years in the schools, they do not possess adequate oral competencies. Though the teacher trainees undergo training for two years, the English language education is mainly exam oriented. Making the teacher trainees communicatively competent is essential to teach the oral skills effectively to their students. Hence the researcher selected the II year DIET students as the sample for the study. Total number of subjects selected for the study is forty (40) in numbers.

4.6. EXPERIMENTAL METHOD

Experimentation is the most scientifically sophisticated process. It is defined as ‘observation under controlled conditions’. Experiments are studies involving intervention by the researcher beyond that required for measurement. The usual intervention is to manipulate some variable in a setting and observe how it affects the subjects being studied. The researcher
manipulates the independent or explanatory variable and then observes whether the hypothesized dependent variable is affected by the intervention.

In experimental studies observable changes take place in order to establish a cause and effect relationship. It is the description and analysis of what will be or what will occur or what can be made to occur under carefully controlled conditions. Experimentation consists of the deliberate and controlled modification of the conditions determining an event and in the observation and interpretation of the changes that occur in the event itself.

Experimenters deliberately and systematically manipulate certain stimuli, treatments or environmental conditions and observe how the condition or behavior of the subject is affected or changed. They are also aware of other factors that could influence the outcome and remove or control them in such a way that they can establish a logical association between manipulated factors and observed effects.

In a well executed experiment researcher must complete a series of activities to carry out their craft successfully. Although the experiment is the premier scientific methodology for establishment causation, the resourcefulness and creativity of the researcher are needed to make the experiment live up to its potential.

Experimentation is extensively used in physical sciences. But its application is greatly limited in education and social science, which deal with
the human behavior. The behavior of human beings cannot be controlled and 
the human behavior cannot subject to laboratory test.

4.6.1. Single Group Pre-Test, Post-Test Design

Experimental designs are unique to the experimental method. They 
serve as positional and statistical plans to designate relationships between 
experimental treatments and the experimenter’s observations or measurement 
points in the temporal scheme of the study. Judicious selection of the design 
improves the probability that the observed change in the dependent variable 
was caused by the manipulation of the independent variable and not by other 
factors. It simultaneously strengthens the generalizability of results beyond 
the experimental setting. (Schuman, Jahoda, Deutsht)

The one group method is the elementary and least rigorous design. The 
researcher selected this design due to the following reasons.

➢ Being the class teacher for this group of students, this group of 
  students is readily available whereas it is difficult to get another 
  group of students.

➢ Conducting the experiment is a time consuming process, the 
  researcher would like to carry out the research without affecting 
  her routine academic work.

➢ As the teacher trainees have to undergo school observation 
  study for fifteen days and teaching practice for forty days, the 
  students who have completed the above schedule only can be
selected. Hence the groups of students who are available are selected to undergo the experimentation.

This design consists of comparing the growth of a single group under two different sets of conditions subjecting the group successively to an experimental and to a control factor for equivalent periods of time and then comparing the outcomes. The procedure in this design is listed below,

- Testing the group
- Introducing the intervention
- Testing again
- Noting the gains

![Experimental Design Diagram]

The experimental design of the study is given as,
In this study Communicative Competence is the dependent variable. Meta Cognition and Mediated Learning Experience are the independent variables. All the three variables were assessed before the treatment. They form the pre assessments, Y11, X11, X21 which are the pre assessments of Communicative Competence, Meta Cognition and Mediated Learning Experience respectively. During the treatment the progressive assessments in all the three variables were done. Three progressive assessments in Communicative Competence, (Y12, Y13, Y14) one progressive assessment in Meta Cognition (X12) and one progressive assessment in Mediated Learning Experience (X22) were also carried out. After the treatment was over, post assessments (Y15, X13, X23) in all the three variables were also completed.
Advantages of this Design

This type of design permits an experiment to be conducted by a teacher in his own classroom without assistance. Since the same group and same teacher are involved, it seems to make a fair attempt at equating the factors of the ability and background of the subjects and the general characteristics of the experimental situation. No part of the difference in the results can be attributed to the variability of the subjects or the teachers.

Limitations

1. It fails to control many non-experimental variables.
2. It is difficult to ascertain whether the difference between the pretest and posttest scores results from the influence of the independent variable or from other variables.
3. The students will be less enthusiastic or more fatigued when they took the second test.
4. The difference is a product of the extra effort that pupils exerted because they were proud of participating in the experiment.

Thus the one group of experimentation is relatively inadequate except for purposes of crude experimentation. Unless it is handled with care, the experimenter may easily give causing changes and overlook other conditions that actually account for the results obtained.

This design may found satisfactory when the independent variable produces a relatively drastic effect, making the influence of non-experimental
factors practically negligible, also where the experiment is of brief duration, thus minimizing the action of irrelevant factors.

4.6.2. EXPERIMENTAL THREATS

**Internal Validity:** Internal validity means the changes observed in the dependent variable are due to the effect of the independent variable not due to some other unintended variables as extraneous variables, alternative explanations or rival hypothesis. If the extraneous variables are controlled, the results can be due to the treatment and hence the study is internally valid. **Campbell and Stanley (1963)** identified eight extraneous variables.

**History:** It refers to the events that happen during the course of the study that can influence the results. During the experimentation unplanned and unexpected events that can affect the effect of the experiments did not happen.

**Selection:** Differences between the subjects in the groups may result in outcomes. This can be nullified by random assignment of the subjects to control and experimental groups. According to law of probability that the groups compared do not significantly differ from one another. The subjects should be equal in all respects.

In this study all the subjects were assigned to the same group. Moreover the students for the teacher-training course are admitted on the basis of their achievement scores in their higher secondary examinations. Hence this threat is nullified.
Maturation: It refers to the biological or psychological changes in the participants during the course of the study. The changes might be becoming stronger, more coordinated or tired as the study progresses.

As far as this study is concerned the period of experimentation is ten weeks. There is no possibility of occurring any major biological or psychological changes among the participants.

Testing: In the experimentation pretest and posttest are common. Subjects become ‘test-wise’ by having taken a pretest that is similar to the posttest. After the pretest the subjects were tested at the end of the study. The researcher may conclude that if any improvement in the post test is due to the experimentation. In the present study along with the pre test and post test three progressive tests were also conducted so that the effect of experimentation is observed periodically.

Instrumentation: Instrumentation arises when there is a change in the measuring instruments between the pre test and post test. In this study the same questionnaires were administered to measure Meta cognition and Mediated Learning Experiences.

Statistical Regression: This threat occurs when the researcher uses extreme groups as the participants, i.e., students at the high or low end of the normal curve. In this study the sample is purposive sample and hence this threat didn’t arise.
Differential Selection: When the participants with different characteristics are in the experimental and control groups, then the results may be due to group differences, not to the independent variable. This can be checked as Malone and Mastropeieri (1992) suggested by dividing the students by sex and grade and then randomly assigning the students. Random assignment of subjects will control this threat. As there is no question of random assignment in this study due to purposive sampling, this threat can be eliminated.

Experimental Mortality: This refers to participants who drop out during the course of study or lost. This is also called attrition. It is the same problem or selection, but it happens after the studies already set up and under way. This didn’t happen in this study because the whole class took part in the experimentation.

Selection: This threat combines the differential selection and maturation. This threat didn’t happen because majority of the subjects are of same age and almost similar in all aspects.

Experimental Treatment Diffusion: If the treatment group is in close proximity to the control group it is possible that the control group participants may learn about the independent variable and begin using some of the ideas themselves. This would cloud the effect of the treatment. As this study involves only one group there is no room for diffusion.

Experimenter Bias Or Contamination: It refers to the deliberate and unintentional effects that the experimenter has on the subjects. It also occurs
if the characteristics of the experimenter such as clothing, age, sex, educational level and race affect subjects’ responses. No such bias were observed by the experimenter during the study and the experimenter takes special measure to prevent this.

**Compensatory Rivalry By The Control Group:** This threat is also known as John Henry Effect who wanted to prove that man was superior to the machine.

**Compensatory Equalisation Of Treatments:** To satisfy the members of the control group, they may be given extra resources.

**Resentful Demoralisation Of The Control Group:** The control group may feel demoralized because they are not part of the ‘chosen’ group. All the above said three threats didn’t happen in this study as there is only one group.

**Contamination:** Contamination is a type of bias introduced when the researcher has some previous knowledge about the subjects involved in the experiment. As the researcher has started the experiment as soon as she got transfer from DIET, KEELAPALUR this threat didn’t happen.

**Artificiality of the Experimental Setting:** In an effort to control extraneous variables the researcher imposes careful control which may introduce a sterile or artificiality atmosphere that is not at all lie the real life situation about which generalizations are desired. The reactive effect of the experimental process is a constant threat.
This threat did not arise because the experimentation was conducted in the classroom atmosphere.

**Threats To External Validity**

External validity is the extent to which the findings of the study in one situation can be generalized or applied to another situation. *Bracht and Glass* describe another type of external validity called Ecological validity that concerns the extent to which the results of an experiment can be generalized from the set of environment conditions created by the researcher to other environmental condition. They were of two types Population and Ecological external variables.

**Explicit Description Of The Experimental Treatment:** This threat occurs when the independent variable is not sufficiently described by the researcher. This threat has been overcome by the researcher in this study because adequate care has been taken to describe the independent variable elaborately.

**Multiple Treatment Interference:** If participants receive more than one treatment, it is not possible to say which treatments are necessary to bring about the desired result. As there is not more one treatment in this study, this threat has been eliminated.

**Hawthorne Effect:** Knowledge of participation in an experiment may introduce the extraneous variables of bias in favour of experimental group. This threat didn’t occur in this study because the subjects were not informed about experimentation. As the skills selected for experimentation are included
in I year syllabus of the Teacher Training programme, they didn’t feel anything new.

**Novelty And Disruption Effects:** This threat is due to fact that a new treatment may produce positive results or may not be effective initially because it causes a disruption in normal activities. In this study the researcher stared the experimentation immediately after getting transfer.

**Pretest And Posttest Sensitation:** Participant who takes pretest may be more sensitized to treatment than individuals who experience the treatment without a pretest. Simply taking a posttest can influence a participant’s response to the treatment. As conducting a test after each unit of the lesson is the routine of the researcher conducting a number of tests didn’t sensitize the subjects.

### 4.6.3 VARIABLES

* The problem selected for the present study is to enhance Communicative Competence of DIET students with the help of Meta Cognitive and Mediated Learning Experience strategies. The study also aims to know the relationship between the three variables.

  i) **Communicative Competence** is the dependent variables.

    ii) **Meta Cognition** and **Mediated Learning Experience** are the independent variables.

    iii) Control of Extraneous variable.
1. Gender - Both male and female students are included in the sample.

2. Maturation - Experimentation was carried out for a period of 3 months.

3. Age - DIET students are of same age group between 17-18.

4. Qualification - All have completed twelfth standard

4.7. MEASURING META COGNITION

The review of related literature reveals the difficulty involved in the measurement of Meta Cognition. Moreover measuring or assessing what one thinks or the mind is very difficult to state or measure. The researchers have to rely upon only on their subjects’ opinion. Many tools were used to measure Meta Cognition like Meta Cognitive inventory, interviews, questionnaire etc. However, the psychometric soundness and the validity of these instruments have not always been evaluated.

Swanson, Christie and rubadeau (1993) used interview style questionnaire to measure Meta Cognition. Meta Cognitive skill was measured by using protocol analysis, a method of analyzing verbal data by Muchilinski, Thomas.E (1996). The protocol analysis used a checklist of 17 behaviours and each behaviour was marked as being present or absent for each student.

Rasnak, Mary Ann (1995) made use of Questionnaire and Interview responses. The tools were analysed and Meta Cognitive knowledge about what has been learned was quantified by a tally of the number of accurate

This information adds to the body of knowledge for the development of an improved instrument designed to measure Meta Cognition. Hence the investigator developed the tool to assess the level of Meta Cognition of the subjects. The major dimensions of Meta Cognition are identified and a questionnaire was prepared which covers all the important dimensions of Meta Cognition.

Pre-Assessment Tool of Meta Cognition (PATMC): The pre-assessment of the level of Meta Cognition of the DIET students is assessed through a questionnaire (ANNEXTURE:1) which contains Twenty five items (25) under three major headings viz, Planning, Monitoring and Evaluation. This tool is divided into three major divisions,

Planning,

Monitoring

Evaluation.

There are ten responses in the planning, another ten in the monitoring and five in the evaluation.
<table>
<thead>
<tr>
<th>Planning</th>
<th>Monitoring</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal setting</td>
<td>Selective focusing</td>
<td>Self criticism</td>
</tr>
<tr>
<td>Time management</td>
<td>Memory techniques</td>
<td>Self review</td>
</tr>
<tr>
<td>Previous learning</td>
<td>Self monitoring</td>
<td>Knowing the Mistakes</td>
</tr>
<tr>
<td>Awareness of strengths</td>
<td>Self recording</td>
<td>Self judgement</td>
</tr>
<tr>
<td>Awareness of weakness</td>
<td>Self appreciation</td>
<td>Error detection</td>
</tr>
<tr>
<td>Help seeking</td>
<td>Scaffolding</td>
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<tr>
<td>Self confidence</td>
<td>Comparison</td>
<td></td>
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<tr>
<td>Self interest</td>
<td>Help seeking</td>
<td></td>
</tr>
<tr>
<td>Self interest</td>
<td>Self Checking</td>
<td></td>
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<tr>
<td>Self determination</td>
<td>Self analysis</td>
<td></td>
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</tbody>
</table>

The presence and absence of the behaviour are marked in the form of ‘yes’ or ‘no’. The score for the presence is ‘1’ and the absence is ‘0’. This questionnaire helps to identify the presence of the Meta cognitive behaviour among the subjects.

**Progressive-Assessment Tool of Meta Cognition (PROATMC):** Out of the many dimensions of Meta Cognition, twenty dimensions (20) were selected. Based on these dimensions a questionnaire (ANNEXTURE :2 ) was framed which could be assessed using three point scale. The presence and the
degree of presence are analyzed in terms of 'greater extent', 'some extent' and 'not at all'.

The progressive assessment tool of Meta Cognition consists of twenty statements (20). Each dimension of Meta Cognition is formulated into a statement. These twenty dimensions are important principles of Meta Cognition identified in the various models, theories and researches of Meta Cognition. They are,

<table>
<thead>
<tr>
<th>1. Goal setting</th>
<th>2. Analysis of Previous learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Anticipation</td>
<td>4. knowing strengths and weakness</td>
</tr>
<tr>
<td>5. Self interest</td>
<td>6. Advance preparation</td>
</tr>
<tr>
<td>7. Help seeking</td>
<td>8. Self talk</td>
</tr>
<tr>
<td>11. Memory strategies</td>
<td>12. Summarizing</td>
</tr>
<tr>
<td>15. Delaying the response</td>
<td>16. Error detection</td>
</tr>
<tr>
<td>17. Debugging</td>
<td>18. Self appreciation</td>
</tr>
<tr>
<td>19. Self criticism</td>
<td>20. Self review</td>
</tr>
</tbody>
</table>
Out of the twenty dimensions the first six strategies can be applied before the learning process starts, i.e., Planning and the next nine can be applying during the learning process, i.e. Monitoring and the last five strategies can be applied after the learning process i.e Evaluation.

**POST ASSESSMENT TOOL OF METACOGNITION (POATMC)**

To assess the level of Meta Cognition of the subjects after the treatment, the ‘self report’ of the subjects is used as the tool. The subjects are requested to give a self report about how they learn and to what extent they made use of the Meta Cognitive principles while learning. The subjects are asked to write freely how they made use of the twenty dimensions of Meta Cognition while learning. (ANNEXTURE:3) From their self-report the presence and the degree of usage of the Meta Cognitive behaviour and absence of the behaviour are measured using the three point scale ‘great extent’, ‘some extent’ and ‘not at all’ with scores of ‘2’, ‘1’ and ‘0’.

**4.8. TOOL TO MEASURE MEDIATED LEARNING EXPERIENCE**

Another tool Mediated Learning Experience Scale (MLES) was prepared by the investigator to assess the Mediated Learning Experience (ANNEXTURE:4) that the subjects receive before and after the treatment. M. Jensen and R. Reuven Feuerstein (1987) developed a scale to assess the Mediated Learning Experience, which consists of ten criteria of Mediated Learning Experience which enhance the cognitive development.
Ten important dimensions of Mediated Learning Experience (MLE) as formulated by Reuven Feurstein which are relevant in achieving the Communicative Competence are identified. Each dimension is represented by a statement and a questionnaire was developed which consists of ten statements. The degree of the presence of the behaviour in each statement is measured using three point scale, 'great extent', 'some extent' and 'not at all'. The scores are respectively are '2', '1' and '0'.

This scale measures the presence or the absence of the important dimensions of Mediated Learning Experience and also the degree of presence of the dimensions. The same tool is administered thrice, Pre Assessment of Mediated Learning Experience, Progressive Assessment of Mediated Learning Experience and Post Assessment of Mediated Learning Experience.

4.9. TOOL TO ASSESS THE COMMUNICATIVE COMPETENCE

Achievement tests are the tools to measure the Communicative Competence of the subjects as the DIET students have to undergo examination in the English Language Education. A Pre Test (ANNEXTURE:5) was conducted to measure the Communicative Competence of the students at the beginning, three (3) Progressive Tests (ANNEXTURE:6,7,8) to measure Communicative Competence during the experimentation and a Post Test (ANNEXTURE:9) to measure Communicative Competence after the experimentation were conducted to measure Communicative Competence. As the skills selected for the
experimentation are from the major skills of Speaking and Listening, more marks are allotted for oral tests than the written test. Totally fifty marks for each test, thirty marks (30) for oral test and twenty marks (20) for written part.

4.10. CONSTRUCTION AND VALIDATION OF THE TOOL

The present study involves measuring the effect Meta Cognition and Mediated Learning Experience on enhancing the Communicative Competence of the DEBT students. Hence tools to be used to measure Communicative Competence which is the dependent variable and Meta Cognition and Mediated Learning Experience which are the independent variables in the study.

When a researcher sets out to construct a tool, there are several factors to be borne in mind. The factors include the area, the age group and the grade for which the test to be developed. The following are the important factors.

Planning

Before constructing a tool the limitations under which it is to be developed should be considered. This includes the purpose of the tool, time, nature of the population, cost and resources at the disposal of the researcher etc.
Preliminary draft

Tools like tests, questionnaire, opinionnaire etc. preliminary draft should be prepared. They are helpful in constructing the items for the test. The preliminary draft should contain more than double the items needed and it should be edited. A small group try-out helps the researcher to get the indices of the difficulty and discrimination quickly for selecting good items for the final test.

Item analysis

The item analysis is important for the improvement of the total score reliability of total score validity or both. The final draft should be prepared and the selected items are included which will be administered to large sample.

While constructing the tool, the purpose of the tool, the language and the length of the tool should also be taken care of. Considering the above points, the following tools are constructed,

- Questionnaire to assess Meta Cognitive level of the students.
- A Scale to assess Mediated Learning Experience (MLES) of the Students.
- Achievement tests to assess the Communicative Competence of the students.

The content validity of the tools are ensured by getting suggestions and criticism from the subject experts, professors and educationists.
Reliability Of The Tools

The reliability of the tools was established by KR 20 method. The reliability of the questionnaire to measure Meta Cognition is 0.65 and the reliability of the scale to measure Mediated Learning Experience is 0.71 the reliability of the achievement test to assess the Communicative Competence of the subjects was established by test retest method which was found to be 0.72.

4.11. EXPERIMENTATION IN PHASES

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
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<td>Pre assessment of the variables, Communicative Competence, Meta Cognition and Mediated Learning Experience</td>
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<tr>
<td>Phase II</td>
<td>Treatment (Teaching the first two skills)</td>
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<td>Phase III</td>
<td>Progressive test I of Communicative Competence</td>
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<tr>
<td>Phase IV</td>
<td>Treatment (Teaching of the third and fourth skills)</td>
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<td>Phase V</td>
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<td>Phase VI</td>
<td>Treatment (Teaching of the fifth, sixth and seventh skills)</td>
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<td>Phase VII</td>
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<td></td>
<td>And progressive assessments of Meta Cognition and Mediated Learning Experience</td>
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<td>Phase VIII</td>
<td>Treatment (Teaching of the last three skills)</td>
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<tr>
<td>Phase IX</td>
<td>Post assessments of Communicative Competence, Meta cognition and Mediated Learning Experience</td>
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</table>
4.12. Duration Of The Experiment

The duration of the experiment was three months.

<table>
<thead>
<tr>
<th>Week</th>
<th>Activity</th>
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<tbody>
<tr>
<td>I Week</td>
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<td>II Week</td>
<td>Selection of the Skills</td>
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<td>III Week</td>
<td>Pre Assessment of the variables, Communicative Competence, Meta Cognition and Mediated Learning Experience.</td>
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<td>IV Week</td>
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<tr>
<td>VI Week</td>
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<tr>
<td>VII Week</td>
<td>Progressive test II of Communicative Competence</td>
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<tr>
<td>VIII Week</td>
<td>Treatment (Teaching of next three skills)</td>
</tr>
<tr>
<td>IX Week</td>
<td>Progressive test III of Communicative Competence and progressive assessments of Meta Cognition and Mediated Learning Experience</td>
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<tr>
<td>X Week</td>
<td>Treatment (Teaching of last three skills)</td>
</tr>
<tr>
<td>XI Week</td>
<td>Post test III of Communicative Competence and Post assessments of Meta Cognition and Mediated Learning Experience</td>
</tr>
</tbody>
</table>

4.13. DATA COLLECTION

MEASURING COMMUNICATIVE COMPETENCE

Pre Test

A Pre Test (Y11) was conducted to assess the level of Communicative Competence subjects among the ten (10) skills selected for experimentation. The Pre Test score was fifty (50) marks.
Progressive Tests

After conducting the Pre Test the first two skills were taught to the subjects. After teaching two skills, Progressive Test I (Y12) was conducted. The Progressive test II (Y13) was conducted after teaching the next two skills after one week. At the end of the fourth week after teaching seven skills another Progressive III (Y14) was conducted and the scores were recorded.

Post Test

After teaching all the skills a Post Test (Y15) was conducted to measure the Communicative Competence of the subjects totally.

ASSESSMENT OF META COGNITION

Pre Assessment

The level of Meta Cognition of the subjects was assessed at the beginning, before the experimentation was assessed with the tool developed by the investigator (PREATMC) and the scores were recorded that is the pre assessment of Meta Cognition (X11).

Progressive Assessment

The progressive assessment of the level of Meta Cognition (X12) during the experimentation in the II week was assessed by using the tool (PROATMC) which consists of twenty important dimensions of Meta Cognition.
Post Assessment

After the experimentation at the end of seventh week the level of Meta Cognition of the subjects was assessed by their ‘Self Reports’ which is the post assessment of Meta Cognition (X13).

The important dimensions are given and the students are asked to write their experiences regarding the dimensions by recalling their learning processes. The subjects’ Self Report were assessed and scores were given based on the degree of the presence of Meta Cognitve behaviour in the three point scale, ‘2’, ‘1’ and ‘0’. Thus the level of Meta Cognition after the experimentation was assessed and score were recorded.

ASSESSMENT OF MEDIATED LEARNING EXPERIENCE

Pre Assessment

The Mediated Learning Experience Scale (MLES) developed by the investigator to assess the level of Mediated Learning Experience among the teacher trainees was used at the first week and the scores were recorded which is the pre assessment (X21) of Mediated Learning Experience.

Progressive Assessment

At the end of third week the same tool was administered and the progressive assessment (X22) scores were recorded in order to know the progressive level of Mediated Learning Experience of the subjects and the scores were recorded.
Post Assessment

At the end of seventh week after the experimentation, the same tool was again administered in order to assess the level of Mediated Learning Experience that the subjects receive during the experimentation which is the post assessment (X23) of Mediated Learning Experience.

4.14. DELIMITATIONS

- The study was confined to the DIET students of Pudukkottai only.
- The study was also confined to the II year DIET students only.
- Only ten sub skill of Speaking and Listening were selected for Communicative Competence.
- Only twenty five principles of Meta Cognition were selected to enhance the level of Meta Cognition among the subjects.

4.15. SCHEME OF DATA ANALYSIS

The relevant data obtained from the pre assessments, progressive assessments and post assessments of all the three variables Communicative Competence, Meta Cognition and Mediated Learning Experience was analysed using the following statistical techniques.

a) Descriptive Analysis
b) Correlational Analysis
c) Differential Analysis
d) Regression Analysis