3.1. Introduction

It is often stated that a well defined problem is a half solved problem. This chapter titled “Statement of the problem” defines the problem undertaken by the investigator in concrete terms. It enumerates the objectives and the assumptions. Not only that, but also it provides the research hypotheses which give the researcher the required direction for his investigation. The hypotheses are highly indispensable in any research process to achieve dependable knowledge. It helps the researcher very much to relate theory to observation and observation to theory. Also, the hypotheses in combination with the specific objectives go a long way in enabling the investigator to identify the variables involved in the study and suggest the systematic methodological procedures that are to be employed to arrive at decisive conclusions. This chapter also deals with the scope, need and importance and the limitations of the study.
3.2. Title of the Problem

"EFFECTIVENESS OF METACOGNITIVE TEACHING LEARNING STRATEGIES ON THE ACHIEVEMENT OF VARIOUS CATEGORIES OF X\textsuperscript{th} STANDARD STUDENTS IN ENGLISH"

3.3. Operational Definition of the Terms Used in the Study

**Effectiveness**

Oxford Dictionary (1975) defines effectiveness as ‘being able to bring about the result intended’. The Chambers 21\textsuperscript{st} Century Dictionary (1999) defines effectiveness as ‘having the power to produce or provide a desired result’. According to Cambridge International Dictionary of English (1996) effectiveness is a ‘method of achieving something or something that produces the result intended to’. Tang (1999) gives a new dimension of meaning to the term effectiveness. He defines effectiveness as the difference between the treated and the control groups in proportion of the events of complete or almost complete overall recovery. Chambers Twentieth Century Dictionary (1975) defines effectiveness as ‘being successful in producing a result or effect’.

In this study, effectiveness refers to the impressive results in the learning of English by the Xth standard students consequent to the treatment of metacognitive teaching learning strategies. Effectiveness refers to the degree of realisation of educational objectives. It also refers to the degree of realisation of higher level of attainment.

**Metacognitive Strategy**

According to Neil J. Anderson, (2002) metacognition can be defined simply as thinking about thinking. Learners who are metacognitively aware, know what to do when they don’t know what to do; that is, they have strategies for finding out or figuring out what they need to do. The use of metacognitive strategies ignites one’s thinking and can lead to more
profound learning and improve performance, especially among learners who are struggling.

Brown A (1987) defines metacognition as the knowledge of one’s cognitive processes and he further defines metacognitive strategy as the efficient use of this self-awareness to self-regular these cognitive processes. As far as this study is concerned, metacognitive strategy refers to learners active control over the process of thinking that is used in learning situations. It is a strategy used by learners to understand, control and manipulate their own cognitive processes. It is a strategy which encompasses self awareness, self knowledge, meta comprehension and self evaluation.

**Achievement**

Oxford English Dictionary (1975) defines achievement as bringing to a successful stage or accomplishing a task in a successful way. Likewise, Webster's College Dictionary (1995) defines achievement 'as a thing accomplished especially by skill in a significant way'. Similarly, Slavin (1986) defines achievement ‘as a higher order of accomplishment at a significant level’.

According to Hallagan and Kauffman (1996) achievement means successfully doing or accomplishing a task. They define achievement as ‘successfully bringing about a desired result.’

As far as this study is concerned, academic achievement is an attainment of expected level of mastery in English. It means a higher level of mastery learning made by the students and an impressive output performance evinced by them in the form of better score in English in the achievement tests conducted at the time of experimentation.
Various Categories of Students

According to Chintamani Kar (1982), emotionally disturbed, shy and withdrawn, impaired students, slow learners, gifted students, culturally and socially disadvantaged students are the various categories of students in the general education classroom.

In this study, various categories of students are the above average students, average students and below average students in the classroom of the investigator.

English

According to Oxford advanced learners dictionary, English is the native language of England, used in Britain, most countries in the British Common wealth, the USA and some other countries. As far as this study is concerned, English refers to the English subject prescribed for the Xth standard students in the state of Tamil Nadu, India.

Abdelhafez (2006) Anthony (1999) and Susan (2002) have used pretest post-test experimental design to establish the efficacy of metacognitive strategy in enhancing English language proficiency. They have applied t-test to assess the level of significance. Effectiveness of metacognitive strategy with reference to different categories of students has been verified by Cardella (1995) and Berkowitz et al. (2004) These studies provided the required theoretical framework, the methods to be adopted and the kind of tool to be used and the statistical techniques to be used for scientific analysis. On the basis of these studies and the theoretical framework the following objectives and hypothesis were formulated for the present experimental study.

3.4. Objectives of the Study

General Objectives

1) To develop metacognitive teaching-learning strategies to teach/learn English at secondary level.
2) To assess the awareness of teachers and students about the metacognitive teaching-learning strategies.
3) To identify the various categories of students at secondary level.
4) To find out the extent of effectiveness of the metacognitive teaching-learning strategies on the achievement of various categories of students in English at secondary level.
5) To assess the advantage of the metacognitive teaching-learning strategies over the traditional lecture method.
3.5. **Specific Objectives**

1) To assess whether there is any significant difference in the level of awareness about metacognitive teaching learning strategies between the control groups and the experimental groups in rural and urban schools before the experimental treatment.

2) To assess whether there is any significant difference in the pre-test performance between the control group students taught through traditional lecture method (TLM) and the experimental group students taught through metacognitive teaching-learning strategies (MTLS) in both rural and urban schools.

3) To know whether there exists any significant difference in the pre-test performance between the control group students and the experimental group students in respect of each category i.e. above average students, average students and below average students in both rural and urban schools.

4) To find out whether there is any significant difference in the pre-test performance between the rural students and the urban students in terms of group as a whole and in respect of each category i.e. above average students, average students and below average students.

5) To know whether there is any significant difference in the pre-test performance among the various categories of students in the control group taught through traditional lecture method in both rural and urban schools.

6) To find out whether there exists any significant difference in the pre-test performance among the various categories of students in the experimental group taught through MTLS in both rural and urban schools.
7) To know whether there is any significant difference in the pre-test performance between boys and girls of the control group and the experimental group in both rural and urban schools.

8) To assess whether there is any significant difference in the level of awareness about metacognitive teaching learning strategies between the control groups and the experimental groups in rural and urban schools after the experimental treatment.

9) To assess whether there is any significant difference in the post-test performance between the control group students taught through TLM and the experimental group students taught through MTLS in both rural and urban schools.

10) To know whether there is any significant difference in the post-test performance between the control group students and the experimental group students in respect of each category i.e. above average students, average students and below average students in both rural and urban schools.

11) To find out whether there is any significant difference in the post-test performance between the rural students and the urban students in terms of group as a whole and in respect of each category i.e. above average students, average students and below average students.

12) To find out whether there exists any significant difference in the post-test performance among the various categories of students in the control group taught through TLM.

13) To measure whether there is any significant difference in the post-test performance among the various categories of students in the experimental group taught through MTLS.
14) To know whether there exists any significant difference in the post-test performance between boys and girls of the control group and the experimental group in both rural and urban schools.

15) To assess whether there is any significant difference in the level of awareness of teachers and students about MTLS in both control group and experimental group in rural and urban schools between before and after the experiment.

16) To verify whether there exists any significant difference in the performance of the control group student and the experimental group students in both rural and urban schools between the pre-test and the post-test.

17) To examine whether there is any significant difference in the performance of each category of students in the control group and the experimental group in both rural and urban schools between the pre-test and the post-test.

18) To assess whether there exists any significant difference in the performance of boys and girls in both the control group and the experimental group in both rural and urban schools between the pre-test and the post-test.

19) To assess whether there is any significant difference in the retention test performance between the control group students and the experimental group students in both rural and urban schools.

20) To know whether there is any significant difference in the retention test performance between the control group students and the experimental group students in respect of each category i.e. above average students, average students and below average students in both rural and urban schools.
21) To find out whether there is any significant difference in the retention test performance between the rural students and the urban students in terms of group as a whole and in respect of each category i.e. above average students, average students and below average students.

22) To assess whether there exists any significant difference in the retention test performance between boys and girls of the control group and the experimental group in both rural and urban schools.

23) To assess whether there exists any significant difference in the performance of the control group students and the experimental group students in both rural and urban schools between the post-test and the retention test.

24) To examine whether there is any significant difference in the performance of each category of students in the control group and the experimental group in both rural and urban schools between the post-test and the retention test.

25) To assess whether there exists any significant difference in the performance of the boys and the girls in the control group and the experimental group in both rural and urban schools between the post-test and the retention test.

3.6. Assumptions of the Study

1) There is no awareness among the students about the metacognitive teaching-learning strategies whereas there is awareness among the teachers about metacognitive teaching-learning strategies. But the extent of awareness differs from teacher to teacher.

2) There are ways and means to identify the various categories of students in general education classroom.
3) The developed metacognitive teaching-learning strategies will enhance the achievement of various categories of students in English.

4) The metacognitive teaching-learning strategies will be effective to various categories of students but the degree of relative effectiveness may vary from category to category.

5) The applied metacognitive teaching-learning strategies will enable the backward students to cope with normal students to a considerable extent.

6) The developed metacognitive instructional strategy will have distinct advantage over the traditional lecture method.

3.7. Hypotheses of the Study

1) There is no significant difference in the level of awareness about metacognitive teaching learning strategies between the control group and the experimental group in rural and urban schools before the experimental treatment.

2) There is no significant difference in the pre-test performance between the control group students taught through traditional lecture method (TLM) and the experimental group students taught through metacognitive teaching-learning strategies (MTLS) in both rural and urban schools.

3) There exists no significant difference in the pre-test performance between the control group students and the experimental group students in respect of each category i.e. above average students, average students and below average students in both rural and urban schools.

4) There is significant difference in the pre-test performance between the rural students and the urban students in terms of group as a
whole and in respect of each category i.e. above average students, average students and below average students.

5) There is significant difference in the pre-test performance among the various categories of students in the control group taught through traditional lecture method in both rural and urban schools.

6) There exists significant difference in the pre-test performance among the various categories of students in the experimental group taught through MTLS in both rural and urban schools.

7) There is no significant difference in the pre-test performance between the boys and the girls of the control group and the experimental group in both rural and urban schools.

8) There is significant difference is the level of awareness about metacognitive teaching learning strategies between the control group and experimental group in rural and urban schools after the experimental treatment.

9) There is significant difference in the post-test performance between the control group students taught through TLM and the experimental group students taught through MTLS in both rural and urban schools.

10) There is significant difference in the post-test performance between the control group students and the experimental group students in respect of each category i.e. above average students, average students and below average students in both rural and urban schools.

11) There is no significant difference in the post-test performance between the rural students and the urban students in terms of group as a whole and in respect of each category i.e. above average students, average students and below average students.
12) There exists significant difference in the post-test performance among the various categories of students in the control group taught through TLM in both rural and urban schools.

13) There is significant difference in the post-test performance among the various categories of students in the experimental group taught through MTLS in both rural and urban schools.

14) There exists no significant difference in the post-test performance between the boys and the girls of the control group and the experimental group in both rural and urban schools.

15) There is significant difference in the levels of awareness of the teachers and students about MTLS in both control group and experimental group in rural and urban schools between before and after the experiment.

16) There exists significant difference in the performance of the control group students and the experimental group students in both rural and urban schools between the pre-test and the post-test.

17) There is significant difference in the performance of each category of students in the control group and the experimental group in both rural and urban schools between the pre-test and the post-test.

18) There exists no significant difference in the performance of boys and girls in both the control group and the experimental group in both rural and urban schools between the pre-test and the post-test.

19) There is significant difference in the retention test performance between the control group students and the experimental group students in both rural and urban schools.
20) There is significant difference in the retention test performance between the control group students and the experimental group students in respect of each category i.e. above average students, average students and below average students in both rural and urban schools.

21) There is no significant difference in the retention test performance between the rural students and the urban students in terms of group as a whole and in respect of each category i.e. above average students, average students and below average students.

22) There exists no significant difference in the retention test performance between boys and girls of the control group and the experimental group in both rural and urban schools.

23) There exists no significant difference in the performance of the control group students and the experimental group students in both rural and urban schools between the post-test and the retention test.

24) There is no significant difference in the performance of each category of students in the control group and the experimental group in both rural and urban schools between the post-test and the retention test.

25) There exists no significant difference in the performance of boys and girls in the control group and the experimental group in both rural and urban schools between the post-test and the retention test.

3.8. Scope of the Study

An effective instructional strategy should cater to pupil diversities and it should reach out to all learners. The existing mode of instruction i.e., the traditional lecture does not rise to the occasion. It does not cater to individual differences and pupil diversities to a great extent. Also, the
current trend is learner centred mode of instruction. With these views in mind, the metacognitive strategy is earmarked for the study to verify the effectiveness of the metacognitive strategy with reference to different categories of pupils in general education classroom.

The metacognitive strategies cater to pupil diversities i.e. low achievers, under achievers and normal students. Low achievers in the rural area include mostly socially disadvantaged students, culturally affected, socio-economically backward, slow learners, students with mild learning disabilities and students with manageable handicaps. The proposed strategy can accommodate the above pupil diversities. Moreover, the metacognitive strategies are mostly learner centred and they cater to auto instruction to a great extent. They ensure student participation in a better way and provide for overcoming barriers to learning.

Sixty students from St. Joseph Higher Secondary School, Dindigul Tamil Nadu, are selected for the study to represent the urban population. Similarly sixty students from S. S. H. N. Hr. Secondary School, Muhavur are also selected to represent the rural population. They are classified into two matching groups. The first group is experimental group which is taught through metacognitive strategy and the second group is control group and it is taught through traditional lecture method. Each group consists of ten above average students, ten average students and ten below average students.

3.9. Need and Importance of the Study

Need and importance of the study can be discussed from two different angles namely a) subject angle and b) strategy angle
a) Subject angle

English plays a major role in India as a link language and as associate official language. It is a source language and also our main international link language. It is a window on the world. So there is a big demand for English at the state and national levels.

As far as language education is concerned, the foundation is laid at the pre-school and primary stage of education. A lot of research has been done or is being done in India and abroad in respect of the study of regional language as well as English. All these research works underline the need for change in our approach to language study. To think creatively and innovate syllabi, methods and strategies to make teaching learning process adopted to the differential needs of people is the need of the hour. Most of the teachers in schools seem to serve in a hostile atmosphere which discourages creativity and innovation among both the teachers and the students. The teachers are either not allowed to deviate from the routine or not interested to do so.

The above observations are applicable to teachers of English too. Linguists have taken so many years to give a satisfactory explanation about the process of acquiring the skills of language. They are yet to explain it fully. The Editor of the ‘Journal of English Language Teaching’ observes that “....... a great advancement has been made in this direction such as the innovation of communicative and communicational approaches to the teaching of English. It is high time teachers of English began to apply their minds to experimenting on these new approaches and to give their thoughtful evaluation”.

Teaching of English in India at the higher secondary level is a massive operation. Unfortunately, students are exposed properly and adequately to spoken English neither at the primary level nor at the secondary level. Middle school teachers blame the primary level teachers for this inadequate exposure.
The uncongenial home atmosphere, the indifference and disinterest of students in learning English and the larger strength of the class are some of the reasons stated by the primary as well as the secondary level teachers for the poor learning of English. The secondary level English teachers complain about the inadequate entry knowledge of the students for low achievement and failure in English.

Out of his own ten years experience in the classrooms, the investigator came to the conclusion that research focussed on remedial measures is of vital importance for rural students in secondary schools, in general and the slow learners among them in particular. His experience in the classroom while teaching English has been bitter and disappointing. Most of the students who constitute the slow learning group fail to understand English spoken slowly using very simple vocabulary. How can such students be expected to speak and write good english?

The main reason for this undesirable situation seems to be the non-availability of language experts at primary, middle and secondary levels. Primary schools teachers teach all the subjects including English, middle level (i.e. Stds VI, VII VIII) teachers teach at least three subjects with English one among them and secondary level teachers handle at least two subjects; English being one of them for most of them. Thus at no level, specialists in English are handling English teaching.

It will not be irrelevant to highlight one fact here. In Tamil Nadu, the Education department appoints only pandits (specialists) in Tamil at the secondary level to teach the first language (Tamil). These specialists do not and need not teach any other subject. Somehow or other students pass all the grades and by the time they enter higher
secondary classes where specialist teachers are available to teach English, it becomes too late for both the teachers and the students to do full justice to the task of learning English. Large number of students with wrong habits in English strongly embedded in their bone and blood compel the specialist teachers at the higher secondary level to follow the beaten track of rote memory method to get a pass mark in English.

The periods allowed for English are not adequate. Only 4 periods are allowed per week. Within the periods the teacher has to enable the students to score pass mark in the examination. So it is but natural that language items or grammar items are neglected to a considerable extent. To teach language items and grammar items thoroughly or properly, teachers need adequate time but that much of time is not provided for them. So the teachers concentrate on memory aspects to ensure pass mark. Moreover, the students find language items and grammar items very difficult. When these items are taught through the traditional method, the students find it very difficult to understand the concept. So special strategy is required to teach grammar items to the students.

The students encounter various problems in learning grammar. There creeps confusion on many occasions. They encounter problems in subject verb agreement, in the use of articles, in transformations etc. The prescribed syllabus does not highlight these aspects. So a well developed strategy is required to tackle and teach these difficult items so that the students will be able to learn correct grammatical structures.

Many investigations have been carried out to throw light on the problems in teaching English (Dewal 1974, Gaikwad 1982, Ghosh 1977, Gill 1984, Kamalash Sadamad 1973, Kudchedkar 1981, Meganathan

Ramar (1994, 1996, 1998, 1999) has studied the effectiveness of various strategies in teaching English grammar to slow learners. Reddy and Ramar (1997) have studied the effectiveness of multimedia – based modular approach in teaching English grammar to the slow learners. But these studies have been made at class VIII level only. No study has been attempted to apply metacognitive strategy in teaching and learning of English grammar various categories of students at secondary level. So a study of this type is warranted. Hence the study has been attempted by the investigator.

b) **Strategy angle**

A classroom contains various categories of students who differ from one another in a variety of ways. As far as learning is concerned, they differ from one another in entering behaviour, learning readiness, learning rate and learning style. Hence, the normal classroom strategy cannot cater to the needs of all the students and it cannot reach out to all the learners alike. So a special strategy, which can enhance the critical thinking of the students is very much essential to ensure better learning, smoother information processing, longer retention and easier recall. The proposed study is an earnest attempt in this regard.

A normal classroom is a miniature society comprising various categories of children with varied abilities and disabilities. These students are the future citizens of our nation. They are going to be the pillars of the
country. It is the primary duty of the teacher to see that each pillar is as strong as the other. This warrants a special instructional strategy which can reach out to all the learners. That is the only way to effectuate optimum human resource development.

All children including the educationally backward children too have every fundamental right to live and participate in all settings and programmes that are normalised. Hence, there arises the need for inclusive education which requires integrating children with special needs in regular classrooms in normal schools. In the inclusive setting, where the excluded are included, an effective instructional strategy alone can reach out to all the learners. In such heterogeneous group, the normal traditional lecture method cannot yield the desired result. This envisages that special instructional strategy is required for such unique setting. Any instruction based on cognitive strategy can bring about the anticipated outcome in the teaching-learning process. Cognitive and metacognitive researches have generated new orientations in offering interventional measures to educationally backward children and thus ensure provisions to fulfil the principles of inclusive education.

Existing researches on cognitive and metacognitive instruction have focussed on the development and refinement of specific strategies. The findings of Bryant (1985) and Slifie et al (1985) confirm that metacognitive training has been effective for developing mathematical and reading abilities of the students. The efficacy of the strategy in the writing tasks has substantially been verified by Brown (1978), Paris et al (1986) and Paliuscar (1982). Researches of Gordon & Barum (1982) and Alley & Deshler (1979) have established the links between metacognitive strategy and improved writing performance.
Metacognitive approach has also yielded fruitful results in the field of computer learning, medicine, nursing and defence services. Metacognitive researches have pervaded the learning disability field. Ellis et al (1982) and Wong (1982) have reported that cognitive strategy applied to learning disabled students promoted self regulated learning.

As students become more skilled at using metacognitive strategies, they gain confidence and become more independent as learners. Independence leads to ownership as students realise that they can pursue their own intellectual needs and discover a world of information at their fingertips. The task of educators is to acknowledge, cultivate, exploit and enhance the metacognitive capabilities of all learners.

Metacognitive approach enables students to benefit from instruction (Carr, Kurtz, Schneider, Turner & Borkowshi, 1989; Van Zile-Tamsen, 1996) and influences the use and maintenance of cognitive strategies. While there are several approaches to metacognitive instruction, the most effective one involves providing the learner with both knowledge of cognitive processes and strategies (to be used as metacognitive knowledge) and experience or practice in using both cognitive and metacognitive strategies and evaluating the outcomes of their efforts (develops metacognitive regulation). Simply providing knowledge without experience or vice versa does not seem to be sufficient for the development of metacognitive control (Livingston, 1996).

The findings of the above studies and the rich experience of the investigator in school education have prompted him to select this complex area to devise an instructional strategy based on cognitive principles and perspectives so as to reach out to all the learners in general education classroom. The present study is an earnest attempt in this regard.
3.10. Limitations of the Study

The limitations of the study are as follows:

i. The study is confined to the students studying in X\textsuperscript{th} standard at St. Joseph Higher Secondary School, Dindigul and the X\textsuperscript{th} standard students of S.S.H.N.Hr. Secondary School, Muhavur of Tamil Nadu state.

ii. The sample consists of 60 students at the rate of 30 students for each group and 10 for each category selected on the basis of systematic purposive random sampling technique.

iii. The experiment was conducted for a period of six months at the rate of one hour per day.

iv. As far as this study is concerned, various categories of students include above average students, average students and below average students.

v. The achievement test used in the study is a teacher made one with its own validity and reliability.