CHAPTER – III

3.1 Introduction

After the problem has been selected, the next task is to define in a form of research. According to Whiteny (1964, PP 80-81), “to define a problem means to put a fence around it to separate it by careful distinctions from like questions found in related situations of need”. It is needed to specify the problem in much greater clarity since the researcher has to find a method to arrive at the right type of conclusion. Hence, the operational definition of the terms of the problem has been defined which helps to narrow the scope of a general question to specific measurable and observable variables. The hypothesis is a powerful tool in research process to achieve dependable knowledge. It helps the researcher to relate theory to observation and observation to theory. Hypotheses of the study with specific objectives enable the researcher to identify the variables involved in the study and suggest methodological procedures that are to be employed. The significance of the study shows the worth and urgency of the study in the present context. This chapter deals with the title of the problem, operational definition of the terms used in the study, objectives, hypotheses, scope, need, importance and limitations of the study.

3.2 Title of the Problem

“Effectiveness of Cognitive, Metacognitive and Behavioural Approaches in Overcoming Specific Learning Difficulties in ADHD Children”.

STATEMENT OF THE PROBLEM
3.3 Operational Definition of the Terms Used in the Study

The operational definitions of the terms used in the study are:

Effectiveness:

Chambers Twentieth Century Dictionary (1972) defines effectiveness as ‘being successful in producing a result or effect’. Similarly, Oxford Dictionary (1975) also defines effectiveness as ‘being able to bring about the result intended’. Webster’s Encyclopedic Unabridged Dictionary of the English Language (1996) describes the term as ‘producing intended result’. Effectiveness is defined as ‘the difference between the treated and control group in the proportion of the events of complete or almost complete overall recovery’ (Tang, 1999).

As far as this study is concerned, effectiveness refers to the impressive results produced in the students with learning disabilities, consequent to the operation of the developed comprehensive intervention strategy. In other words, it refers to the attainment of the satisfactory level of overcoming learning difficulties among ADHD children.

Cognition and Metacognition:

According to Oxford Dictionary (2000) the meaning of the term cognition is knowing, perceiving or conceiving at distinct from emotion and violation. To Psychologist Jean Piaget, the word cognition means ability to think, to reason and to understand. According to Chambers Dictionary (1981), ‘cognitive’ is an adjective for ‘cognition’, which means capable of or pertaining to cognition (apprehension of certain knowledge).

Soblin (1979) defines cognition as “the processes and structures of knowing and the branch of psychology which studies knowing, including the study of perception, attention, memory, problem solving, thinking and language”. Stephen K. Reed (1988) defined cognition as ‘the acquisition of knowledge’.

The Oxford Dictionary (2000) views metacognition as meta thinking. According to Flavell (1970), Metacognition is nothing but monitoring and evaluating one’s current memory, or thinking capabilities. Henry, M. Wellman (1985) defined metacognition as “the person’s knowledge of cognitive processes and states such as
memory, attention, knowledge conjecture and illusion. Metacognitive is the adjective for metacognition”.

Ashman and Convey (1989) defined metacognition as “an individual’s capacity to monitor and regulates his or her mental processes while approaching new learning task or solving a problem”.

Cornoldi (1990) defined metacognition as “a dual concept having two major components namely, knowledge of the skills needed to perform a specific task effectively and an ability to use self-regulation to ensure successful completion of the task”.

In this study, the cognition and metacognition refers to the focus on enhancing self-control and self-regulation, which would seem a natural target in treating ADHD. Self-control can also increase generalization and maintenance of appropriate learning behaviour. Several techniques have been employed to enhance self-regulation, self-monitoring, self-instruction, self-statements and self-guidance; it’s highly effective to overcome ADHD behaviour.

As far as this study is concerned cognition and metacognition refers to the comprehensive metacognitive strategies such as i) task orientation, ii) task-planning, iii) self-monitoring, iv) self-regulation and v) self-evaluation used in this study to remediate language learning difficulties in reading, writing and spelling.

**Behavioural Approaches:**

Behavioural management strategies are useful for students with learning difficulties. The teachers and parents can use behaviour management strategies appropriately to overcome the problems that hamper learning. In this study, behaviour management approach refers to the reinforcement, contingency contracting, out time and home school co-ordination. Reinforcement is a consequent event that occurs after a person makes a behavioural response. Reinforcers increase the likelihood that preceeding behaviour will be repeated. A positive reinforcement is a consequence that is added or given to the child. A negative reinforcement is a consequence that is removed from an individual. The preceding behaviour increases or decreases as a result of the reinforcement. Contingency contracting is a written agreement between the child
and the teacher. The idea that something desirable can be used to reinforce something the student does not wish to do is the essence of contingency contracting.

Timeout is a procedure in which the disruptive child is removed from the instructional activities and placed in an isolated area for a short period of time. Isolation does not have to be complete to be effective, but, it does not remove the student from the group. Timeout is a powerful technique to manage disruptive behaviours in children. If implemented properly, it offers an effective means of managing ADHD behaviour in children. Similarly, programmes of home school co-ordination are of much use to improve the behaviour of children by combining the school and home effect. Behavioural goals are set for children, and the teacher can motivate the students to achieve the goals. The behavioural management sheets are sent home, which are signed by the parents to acknowledge the teacher comments, and then returned to school. The child is reinforced at home for the positive behaviour displayed at the school.

As the children with learning difficulties often experiences emotional and behavioural challenges, positive behaviour supports in the form of reinforcement, motivation, building self esteem and cognitive behaviour modification is much needed. In this study, behaviour approach refers to the use of behaviour management such as reinforcement, contingency contracting, time out and home school co-ordination as described above.

**Specific Learning Difficulties:**

According to Samuel Kirk (1963) children with learning disabilities are those ‘who have disorders in development in language, speech, reading and associated communication skills needed for social interaction’.

The National Joint Committee for Learning Disabilities (1981) states that, ‘learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning and mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to the central nervous system of dysfunction. Even though, learning disability may occur concomitantly with other handicapping condition, it is not the result of those conditions or influences.'
In this study, ‘Learning Disability’ refers to the students who have difficulties in reading, writing and spelling and whose difficulties cannot be traced easily to any lack of intelligence or to inadequate teaching. In western contexts, particularly in European countries, the term ‘learning difficulties’ is used in the place of learning disabilities. In American context, the term ‘learning disabilities’ is used in the place of learning difficulties. In this study the term ‘learning difficulties’ is used in the place of learning disabilities.

ADHD:

Attention Deficit Hyperactivity Disorder (ADHD) is a condition affecting children and adults that is characterized by problems with attention, impulsivity and overactivity. According to DSM-IV (1994) classification, there are three sub types of ADHD – predominantly attentive in, predominantly hyperactive / impulsive and a combined type. The children with ADHD exhibit the characteristics such as attentiveness in, distraction, lack of sustained attention, hyperactivity and impulsivity. Other associated characteristics of ADHD are such as intellectual impairment, academic problems, deficit in cognitive and executive functioning, social and conduct problems. In this study ADHD children are those who are characterised by the above stated aspects.

Children:

Oxford Dictionary (2000) defines children as ‘young human beings’. In this study children refers “to those who are studying in IV and V standards in the age group of 9 and 10”.

3.4 Objectives of the Study

1. To develop a procedure to identify the children with ADHD behaviours such as inattention, hyperactivity and impulsivity.
2. To identity the background characteristics of children with ADHD (Gender, Age, Community, Birth order of the child, Nature of family, Parental occupation, Parental practices and Peer group association).
3. To study the parental practices and peer group association of children with ADHD.
4. To develop diagnostic tests to identify the specific learning difficulties such as reading, writing and spelling experienced by the children with ADHD.
5. To find out the significant differences, if any, in the specific learning difficulties of children with ADHD behaviours due to variation in their Gender, Age, Community, Birth order of the child, Nature of family, Parental occupation, Parental practices and Peer group association.

6. To find out the correlation between specific learning difficulties and ADHD behaviours in children.

7. To find out the correlation between parental practices and specific learning difficulties (Reading, Writing and Spelling), parental practices and ADHD behaviours (inattention, hyperactivity and impulsivity).

8. To develop cognitive, metacognitive and behavioural approaches to overcome specific learning difficulties in ADHD children.

9. To find out the effectiveness of the developed cognitive, metacognitive and behavioural strategies along with remedial instructions to overcome the specific learning difficulties as well as ADHD behaviours of children, before and after adopting the CMB approaches.

10. To find out the significant differences, if any, in the specific learning difficulties as well as ADHD behaviours of children due to variation in their Gender, Age, Community, Birth order of the child, Nature of family, Parental occupations, Parental practices and Peer group association, after adopting the cognitive, metacognitive and behavioural (CMB) approaches.

11. To find out the correlation between the specific learning difficulties and ADHD behaviours in children after adopting CMB approaches.

12. To find out the correlation between the parental practices and the specific learning difficulties in children with ADHD behaviours after adopting CMB approaches.

13. To find out the correlation between peer group association and the specific learning difficulties in children with ADHD behaviours after adopting CMB approaches.

3.5 Assumptions of the Study

1. It is possible to develop a procedure to identify the children with ADHD behaviours.

2. The background characteristics of ADHD children and their specific learning difficulties may vary.

3. It is possible to develop diagnostic tests to identify specific learning difficulties (reading, writing and spelling) and these may vary in children with ADHD.
4. The Parental practices and peer group association of children with ADHD and learning difficulties may not vary.

5. It is possible to develop and use the cognitive, metacognitive and behavioural approaches to overcome specific learning difficulties as well as ADHD behaviour in children.

3.6 Hypotheses of the Study

1. There is significant difference in the specific learning difficulties of children with ADHD behaviours due to variation in their Gender (Boy/Girl), Age (9yrs./10yrs.), Community (OC/BC/MBC/SC/ST), Birth order of the child (First / Second / Others), Nature of family (Joint / Nuclear), Parental occupation (Private / Government / Self-employed), Parental practices (Poor / Moderate / Good) and Peer group association (Negative / Positive), before adopting the cognitive, metacognitive and behavioural approaches.

2. There is a significant correlation between specific learning difficulties and ADHD behaviour in children before adopting CMB approaches.

3. There is a significant correlation between parental practices and the specific learning difficulties, parental practices and ADHD behaviours in children before adopting CMB approaches.

4. There is a significant difference in the specific learning difficulties as well as ADHD behaviour of the children before and after adopting the cognitive, metacognitive and behavioural approaches.

5. There is no significant differences in the specific learning difficulties as well as ADHD behaviour of children due to variation in their Gender, Age, Community, Birth order of the child, Nature of family, Parental occupations, Parental practices and Peer group association, after adopting the cognitive, metacognitive and behavioural approaches.

6. There is a significant correlation between the specific learning difficulties and ADHD behaviours in children after adopting CMB approaches.

7. There is a significant correlation between the parental practices and the specific learning difficulties, parental practices and the ADHD behaviours in children after adopting CMB approaches.

8. There is a significant correlation between the peer group association and the specific learning difficulties in ADHD children after adopting CMB approaches.

3.7 Scope of the Study

Language is the base for communication. Reading, writing and spelling are indispensable for effective communication. In primary schools there are children with
language disorders and if these are not identified and remedial instruction are not given at early years, it leads to learning difficulties which may have their impact on personal, social and academic development of children. The children with ADHD behaviours like inattention, impulsivity and hyperactivity too have learning difficulties, particularly in language acquisition i.e., reading, writing and spelling. Identification of such children at the early years can facilitate the development of appropriate strategies to overcome ADHD behaviours as well as their SLD’s.

The present study aims to identify children with ADHD behaviour as well as specific learning difficulties in English at primary stage. For this, the study attempts to develop diagnostic tests in reading, writing and spelling difficulties for ADHD children in English. It also aims to study the influence of pupils Gender, Age, Community, Birth order of the child, Nature of family, Parental occupation, Parental practices and Peer group association on the type of specific learning difficulty. It also concentrates on the relationship between ADHD and parental practices, ADHD and SLD in children. Further, the study also attempts to develop cognitive, metacognitive and behavioural strategies to overcome ADHD behaviour and Specific learning difficulties in children with ADHD. Finally, it focusses its attention on the effectiveness of the developed strategies to overcome ADHD and SLD in children with ADHD behaviours.

3.8 Need and Importance of the Study

Specific learning difficulties is a term applied to the students whose difficulties are not directly related to a specific intellectual, physical or sensory disability, although students with disabilities often do experience problem in specific learning and social adjustment (Brock, 1995). Though Mittler (1995) suggests that it is difficult to obtain an accurate picture of the number of pupils who are defined as having specific learning difficulties, there are some approximate surveys. Helenders (1993) estimates that there may be 200 million disabled people in less developed countries. National Health and Medical Research Council (1990) reported that 10% to 16% of the school population exhibits specific learning difficulties. The above surveys clearly indicate that if it is consistent, then it entangles the world within a short span of time. Hence, it is the right time to take appropriate steps to overcome the specific learning difficulties.
The term ‘Learning Disabilities’ has become a household word in U.S.A. and a phrase from a Broadway’s play exhibits how common the term is in U.S.A. “I am just an average American Male, I have a two storied house in the sub urban, a wife, a cat, a dog, two cars and three children, one with learning disabilities”. This portrays how common and complex phenomena learning disabilities are in U.S.A. whereas; it is a freak, unknown or new term to Indians.

First of all, Indians need an awareness of the term learning difficulties. Eventhough, the Indian children face such problems, neither the parents nor the teachers do anything in this regard. Their pretty well comment is he / she is a hard nut, and we can’t do anything. The main reason for not indulging in escalating the disability is their ignorance. The ultimate result of this kind of disability or difficulty will bring dropouts, stagnation and wastage in our educational system. The remedial tasks may lead to Universalisation of Primary Education and Secondary Education, which is the target of the Ministry of Human Resource Development, Govt of India.

Numbers of researcher have been made on different aspects of specific learning disabilities abroad but not in India. Though some of the Education Departments at University level focus on this most exciting term; more researches, more publications and more public interests should be generated in this sub-area of education. But in no-way can the theoretical researches attain the fruitful result. It is indispensable to have practical knowledge of handling the specific learning disabled children.

As India is a bilingual and multi-lingual country, in almost all the States, children are learning more than one language i.e., mother tongue and English. And in some of the states, more than three languages are taught at the school level itself. In a multilingual country, the importance of learning the link language like English is not overemphasized. Even the parents from remote areas are taking steps to send their children to the English medium schools with the intention that their children can survive more effectively at later life with the adequate knowledge of English language.

English, being a foreign language, the native Indians experience certain specific learning problems especially in reading, writing and spelling, at the beginning itself. If such learning problems are not taken care of, naturally, it leads to a particular learning difficulty (reading, writing, spelling and arithmatic at later stage of life. Hence,
attempts are needed to take care of such things in the form of identifying the nature and extent of specific learning difficulties in ADHD children at primary stage and to find out the possible ways and means of developing appropriate instructional strategies (cognitive, metacognitive, behavioural approaches) to overcome such difficulties.

As the field of specific learning difficulties / disabilities is in embryonic stage, in India the research conducted on different aspect of learning disabilities is very meagre and may not give clear cut ideas about this concept. In the western world, a good number of studies have been conducted on different factors associated with specific learning disabilities (Duffy, Dencla, McAnulty and Holmes 1998; Livingstone, Rosen, Drislone et al., 1991; Rumsey, Berman, Denekla et al., 1987; Childs and Finucci, 1983; Eldridge, Denckla, Bien et al., 1989; Reiss and Ferund, 1990; Durkin, 1989; Coles, 1987; Maslow, 1970); reading disabilities and the effectiveness of certain instructional strategies (Biegar, E. 1978; Clark, M.M. 1970; Ganschow, L. 1984; Hulme, C. 1981; Ingram, D. 1976; Johnson, D.J. and Myklebust, H.R., 1962; Kasvik, A. 1993; MacMeekan, M. 1939; Nelson, H. 1974); writing disabilities and the effectiveness of certain instructional strategies (Johnson, D.J. and Myklebust, H.R. 1967; Strauss, A. and Lahtinen, L. 1947; Nelson; Kleber, Treegoob, Huffmann and Cass, 1976; Lindsay and McChennan, 1984); and spelling disabilities and the effectiveness of certain instructional strategies (Boder, E. 1973; Bryant, P and Bradley, L. 1983; Ellis, A.W. 1982; Lehr, F. 1984; Peter, M. 1970) are so familiar and the educational system prevailing in western countries has taken care of all the disabilities in children from primary stage to higher education.

According to the famous psychologist Jean Piaget (1953), the word ‘cognition’ means ability to think, to reason and to understand. Cognitive development is nothing but developing the abilities to think, reason and understand. Metacognition is the ability to know what we have to think, reason, to act and also what we know and do not know. It refers to both the knowledge about cognition and regulation of cognition (Reid, 1988). Flavell first introduced it in 1976. Brown (1980) defined metacognition as the deliberate conscious control of one’s own cognitive actions. Jean Piaget developed “Assimilation and Accommodation” as a model of cognitive development. It describes how this cognitive system interacts with its environment and by means of many such interactions how it undergoes developmental stage. There are so many cognitive
developments that will occur in the primary / childhood in children. Sterbeng and Powell (1983) identified cognitive developmental trends such as; information processing capacity, domain specific knowledge, concrete formal operations, qualitative thinking, sense of game etc.,

Clarizio, Oraig and Mehrens (1987) say metacognition also develops the inner language, generally at the age of five years. Even at the early age of two, the children have been found to show some planning for a test of memory. This conscious planning is also called as metacognition. Research evidences (Bloom and Border, 1950; Brown, 1978 and Whimbey, 1980) show that those children, who possess metacognitive and cognitive skills and practise them, are the ones who think critically, flexibly and insightfully and can apply their intellectual skill consciously.

‘Metacognition’ can best be described as ‘understanding and controlling one’s own thinking’. It refers to an individual’s capacity to monitor and regulate his or her mental processes while approaching a new learning task or solving a problem (Ashman and Conway,1989). Metacognition has two main components: an awareness of the skills needed to perform a specific task effectively and the ability to use self regulation to ensure successful completion of the task and coping with any difficulties (Cornoldi, 1990). It is considered that metacognition helps a learner to recognize that he or she is either doing well, or is having difficulty in learning or understanding something. A learner who is monitoring his or her own on-going performance will detect the need to pause, to double check, perhaps begin again before moving on, to weigh up possible alternatives or to seek outside help. In this respect, metacognitive strategies are an essential part of what are traditionally referred to as independent study skills. Brown (1990) says metacognitive strategies are plans we use to direct our own learning which include setting objectives, listing resources needed, planning a sequence of actions, and using an appropriate yardstick to judge success.

The metacognitive and cognitive strategies consist of three stages; planning, monitoring and checking outcomes. The elements of metacognition include metamemory and metacomprehension. Flavell (1971) and Flavell and Wellman (1977) coined the term metamemory which refers to a person’s awareness of his/ her own memory capacities and processing. Meta-comprehension refers to, an ability of the learner in respect of what the child is ‘ready’ to learn when the child is made to know
what he/she does not know. Good number of studies have been reported on cognitive, metacognitive and behavioural strategies in overcoming specific learning difficulties in ADHD children (Baer & Nietzl, 1991; Collins, 1994; Durlak et al. 1991; Hulsugge et al., 1987; Ina, 1993; Levy & Lysynchuk, 1994; Martin et al. 1998; Reddy & Jayaprabha, 2001; Reddy & Santhakumari, 2003; Reddy & Shyamala, 2004; Reddy & Sujathamalini, 2003; Stefert Kroese, 1997; and Vaughan et al. 2000). The research clearly indicated that the cognitive, metacognitive and behavioural approaches and strategies were made to help the child think on her / his own difficulties in language developing skills like reading, writing and spelling. The studies revealed that the basic or simple procedure of behavioural approaches, metacognitive and cognitive strategies is used in ADHD children to overcome specific learning difficulties. Research studies seem to provide the following tentative conclusion on cognition and behavioural approaches.

i) Behaviour modification approaches based on operant conditioning aimed directly at observable behaviours and they follow the perspective that behaviour under voluntary control is strongly influenced by their consequences. These therapies are widely classified as therapies based on extinction and punishment.

ii) Apart from eliminating undesirable behaviours, operant conditioning can also be used to shape and increase memory and concentration. This can be done by providing positive reinforcement, and tokens.

iii) Metacognition is developmental in nature. As children grow older they become involved more actively in their own learning. Children following normal developmental patterns develop strategies to facilitate their learning and become able to monitor their own efforts.

iv) The effects of metacognitive and cognitive training are often task-specific, especially with low-ability students. Provision must be made for training to be applied across a variety of tasks to aid generalization.

More than this, the studies also have established that cognitive, metacognitive and behavioural approaches are very effective in overcoming specific learning difficulties in ADHD children. Based on this, the investigator attempts to identify research on cognitive, metacognitive and behavioural approaches to overcome specific learning difficulties in ADHD children. But there is dearth of research in the area of specific learning difficulties in ADHD children linked with cognitive, metacognitive and behavioural approaches, particularly in India. Such research studies have been
conducted more in western countries (Collins, 1994; Enoch & Ina, 1993; Levy and Lysynchu 1997; Osberne, 2001). A few Indian studies have been conducted only in recent years on metacognitive and cognitive strategies (Reddy & Jayaprabha, 2001; Reddy & Santhakumari, 2003; Reddy & Shyamala, 2004) to overcome learning difficulties, behaviour difficulties in children.

In this regard, specific learning difficulties in ADHD children are wide open to the Indian researchers. Attempts in this direction will pave way for better understanding of the problems of ADHD children with specific learning difficulties and the ways and means of overcoming such difficulties. Further, the knowledge of the background variables of children having ADHD behaviours with specific learning difficulties will give a better insight into the problems and the methods of providing a conducive environment to the children at home and school situation. The present study is an attempt in this direction.

3.9 Limitations of the Study

i) The study is confined to ADHD children with SLDs in 4th and 5th standard only.

ii) The study is concerned only with the specific learning difficulties like reading, writing and spelling in ADHD children.

iii) The study is limited to adopt only cognitive, metacognitive and behavioural approaches and remedial instructional strategies to observe SLDs of ADHD children only.

iv) The methodology used in the study is only quasi, experimental design.

v) The tools used are not standardized one, but have their own reliability and validity.

vi) The sample of the study consists of only 27 children of ADHD behaviour with reading, writing and spelling difficulties. All the children are belonging to Balajee Vidhyasharam Matriculation School, Chennai only.

vii) The CMB approaches used in the study is only for a period of six months.

The methodology followed in the present investigation is presented in Chapter – IV.