CHAPTER – II : REVIEW OF RELATED LITERATURE

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CHAPTER - II

2.1 Introduction

An interpretative review of related literature is exactly a summary and synthesis of relevant information on a research problem. A literature review is usually a critique of the status of knowledge of a carefully defined topic. The literature review enables the researcher to gain further insights from the study. The purpose of the review of literature is to allow the researcher to acquaint himself/herself with current knowledge in the field in which he/she is going to do his/her research.

The review of related literature involves the systematic identification, location and analysis of documents containing information related to the research problem. These documents include articles, abstracts, reviews, monographs, dissertations, books, other research reports and electronic media. The review has several important functions that make it well worth the time and effort.

The major purpose of reviewing literature is to determine what has already been done that relates to the research topic. This knowledge not only avoids unintentional duplication, but also provides the understanding and insights necessary to develop a logical framework.

In this chapter a general and rapid survey of the work already done exploring the complex factors involved in learning difficulties is made.
2.2 Studies on Learning Difficulties

The literature available describes the fact that there are many studies conducted abroad on learning difficulties.

The studies on learning difficulties/disabilities are inadequate and insufficient in India as this field is only sprouting up in India.

The studies so far conducted have been concentrated mainly on reading, writing, spelling and arithmetic difficulties. They have not concentrated much on the psycho-social factors of students having learning difficulties. Some research work related to the psycho-social factors of students with learning difficulties/disabilities has been conducted abroad. The investigator has reviewed these studies and presented them under the following headings

2.2.1 Studies Related to Reading Difficulties
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2.2.1 Studies Related to Reading Difficulties

Cirino et al. (2002) studied 144 severely reading impaired dyslexics from grade II and III who exhibited a discrepancy between their reading achievement and cognitive ability. Sixty percent of these children demonstrated a double deficit in phonological and rapid naming skills.

Clark (1970) in his study of nineteen children of normal intelligence who were severely backward in reading found out that twelve showed poor auditory discrimination and ten had associated speech difficulties. It is stated in his work that children who have speech and articulation difficulties beyond the age of seven or eight years also have problems with discrimination of speech sounds (auditory discrimination). This is reflected in poor reading. In his research children who had a specific reading disability were compared with a group of average readers. In this sample the correlation between speech errors (errors of articulation) and errors in auditory discrimination was 0.69. Auditory discrimination problems can occur in children who hear normally. None of the children in this study had apparent hearing problems.

Clay (1990) undertook a research on the effectiveness of the Reading Recovery Strategies on Disabled Children and pointed out that, the programme can be so effective that only one percent of children attending the individualized sessions require further long term assistance with reading and writing.

Cole and Chan (1990) have reviewed the classroom-based research on what is known as ‘reciprocal teaching’. In the approach to the improvement of study skills, teacher and student work together in the initial stages sharing ideas, generating questions which can be answered by a specific text, predicting answers, checking for meaning and finally collaborating on summary. The teacher’s role is one of demonstrating
effective ways of gaining meaning from text; but the long-term aim is to have the students internalize these strategies for themselves.

Doehring (1968) in his work ‘Patterns of Impairment in Specific Reading Disability’ compared 39 boys between the ages of 10-14 who were retarded in reading but otherwise normal, with a control group of 39 boys with normal reading skills. He found that normal readers were significantly superior to the retarded readers on 62 out of the 103 measures and that the pattern of deficit included visual and verbal impairment.

Fergusson and Lynskey (1997) examined the relationship between early reading difficulties and later behavioural problems in New Zealand children from the point of school entry to the age of sixteen. Children with early reading difficulties had increased rates of behavioural problems up to the age of 16 years, which was more evident for boys.

Francis et al. (1996) in the study ‘Developmental Lag versus Deficit Models of Reading Disability : A Longitudinal, Individual Growth Curves Analysis’ discover that children with reading disabilities show word level reading problems in earlier stages of reading instruction.

Geetha (2000) attempted to find out the impact of adapted techniques on the achievements of dyslexic children. The objective of the study was to i) identify children with reading disability ii) determine the areas in which they need corrective instruction iii) develop remedial package and implement on the selected children iv) evaluate the progress of the children with dyslexia and v) find out the relationship between the achievement of the students and adapted techniques followed. The result reveals that there is an increase in post-test scores compared with pre-test scores.

A phonological awareness intervention study by Gillon (2000) included children with Expressive Phonological Impairment (EPI) who
received phonological awareness intervention, children with EPI who received traditional intervention without phonological awareness, and a control group of peers who were typical. Results from this study revealed that children with EPI who received phonological awareness intervention made greater gains in phonological awareness, speech production, reading ability, and reading comprehension than the group who received traditional intervention.

Hall (1991) in his study investigated the developing reading skills of 12 second and third grade learning disabled children in mainstream classrooms and resource rooms. The study focused on how the process of achieving intersubjectivity in a routine task like reading takes place and how the construction of intersubjectively (referred to as scaffolding) can vary as a result of the teacher norms being brought to the task. Transcripts of teacher-child interaction were coded according to Vygotskian principles. Resource teachers were found to apply these principles more consistently than mainstream teachers. As a result, resource teachers had longer interactions with children in which they made more adjustments that catered to a reader’s zone of proximal development. Students in resource rooms were also more likely to have successful reading episodes and were more likely to initiate interaction. It is concluded that resource room teacher-child interactions were longer because mainstream teachers persisted in the use of the recitation model of teaching to a greater extent than did resource teachers and because mainstream classroom settings used a more hierarchical physical arrangement of space and the teacher’s position. It is suggested that resource rooms are more effective in supporting learning disabled children academically.

Huff et al. (2002) found the relation of reading rate and rapid automatic naming (RAN) for pictures on 31 third graders. Reading rate was
measured as the number of seconds required for reading a passage aloud. Rapid automatic naming was assessed with the RAN portion of the Woodcock Johnson III Tests of Cognitive Abilities. A moderate correlation of -.61 between the sets of scores suggests RAN assessment may be useful in screening for reading deficits in third-grade children.

John and Rattan (1991) conducted a study on Short Term Memory (STM) tests as predictors of reading achievement of learning disabled and educable mentally retarded students. They examined nine measures of short-term memory used by school psychologists with a group of learning disabled (N=48) and educable mentally retarded (N=34) special education students. Results indicated that not all STM tasks were significant predictors of reading. Sentence memory task was the best predictor for learning disabled students whereas letter sequence task was the best predictor of reading for educable mentally retarded students.

Joseph et al. (2003) explored the relationships among cognitive processing, phonological processing and basic reading skill performance. Cognitive theorists propose that Planning, Attention, Simultaneous and Successive (PASS) processes are related to various phonological skills. A sample of 62 primary grade children referred for reading problems were administered measures of cognitive processes (Cognitive Assessment System), phonological processes (Comprehensive Test of Phonological Processing) and basic reading achievement (Woodcock-Johnson Tests of Academic Achievement-III). Findings indicated that some cognitive processes were significantly related to phonological processes as well as basic reading skills. The strongest relationships were found between phonological memory and successive processes and between phonological awareness and basic reading performance.
Karen and Andrey (1996) offer guidelines to educators of young children concerning the identification of articulation language, fluency and learning disorders. Early identification and remediation can minimize adverse academic consequences since links have been found between language delay and later reading difficulties; between hearing disorders and later psycho educational difficulties.

Kusuma Harinath (2001) studied certain factors related to learning disabilities in English among school students. The objectives of the study were to develop diagnostic tests to identify reading, writing and spelling difficulties in English, to find out the intelligence of students with reading, writing and spelling difficulties, to study the personality characteristics of students with learning difficulties and, to study the awareness of teachers and parents about learning difficulties. The study reveals that,

1) Boys experienced more reading disabilities than girls. 2) Age and class had no effect. 3) The community influenced on their spelling difficulties. 4) Parents’ educational qualification influenced learning difficulties. 5) The location of the school influenced learning difficulties. 6) The medium of instruction also influenced learning difficulties, particularly spelling difficulties. 7) Mass media has no influence. 8) Parents’ income influenced reading difficulties but not writing and other difficulties. Thus this study delineates the various factors related to learning difficulties in English among school students.

Larrivee and Catts (1999) examined the relationship between EPI (Expressive Phonological Impairment) and early reading achievement. A significant correlation was found between expressive phonological ability and early reading achievement in children identified with moderate-to-severe EPI, revealing EPI as an early sign of potential reading disabilities. A notable finding of this study was that reading achievement was more highly
correlated to expressive phonological ability when the expressive phonology was measured in multisyllabic words and a nonword repetition task rather than a single-word articulation test. In other words, the strength of the relationship depended on the way in which expressive phonology was measured. Therefore, Larrivee and Catts concluded that the assessment instrument plays an important role in determining appropriate severity, thus affecting outcomes.

McGee et al. (1988) in the study on reading disabled groups of boys and girls found that during the early school years, there was a significant relationship between behaviour problems and reading disability in both sexes. Behaviour problems seemed to arise as a consequence of the reading disability. By age 13, reading disability in boys and girls was associated with oppositional defiant and inattentive behaviours. It is seen that the association of reading disability with other behaviour problems might lead to later delinquent behaviours.

Quist (1995) in her study on the effects of using graphic organizers with learning disabled students to increase comprehension examined if there would be any significant difference in comprehension test scores when learning disabled students were instructed with and without graphic organizers while reading novels. Subjects were five male fifth grade learning disabled students reading on the fourth grade level, who came from the same middle class suburban school and background. Students read two teacher selected novels, the first novel was read without the use of graphic organizers, and the second novel was taught using graphic organizers. Subjects were asked a set of teacher-generated comprehension questions. Results indicated that the use of graphic organizers increased comprehension when used with learning disabled students.
Ramaa (1993) conducted a study on the diagnosis and remediation of dyslexia. The main findings were,

1. Dyslexics were differentiated from normal readers only by 4 out of 10 variables selected for the study; they are auditory sequential memory, visual verbal association, word analysis and word synthesis. But they significantly differ from non-dyslexic poor readers only in visual verbal association and word analysis.

2. Like dyslexics, even non-dyslexic poor readers are relatively more deficient than normal readers in auditory processing skills. Hence reading retardation cannot be attributed to poor educational background only.

Ramaa (1984) conducted a study on the diagnosis and remediation of dyslexia. In the identification phase, dyslexics were identified from among a group of 550 children who were studying in grades III and IV, and having Kannada as their first language at school, through an exclusionary approach by using a set of criteria. Out of those 550 children only 14 could be identified as dyslexics in the diagnostic phase. This phase involved a comparison of the neuropsychological process of dyslexics, non-dyslexic poor readers and normal readers, a comparison of the errors committed by all the three groups while reading Kannada and an analysis of the developmental history of the dyslexics. The major findings were, 1) dyslexics could be differentiated from the other two groups on the basis visual verbal association ability, 2) dyslexics may or may not have deficiency in one or more visual and/or auditory processing skills, 3) majority of normal readers were deficient in visual processing skills in comparison with the other two groups, 4) like dyslexics, non-dyslexic poor readers also were relatively more deficient than normal readers in auditory processing skills, 5) there was no qualitative difference in the reading errors
committed by the three groups of readers, 6) all the three types of readers got confused usually between letters with auditory, visual or auditory–visual similarities, 7) in most of the cases the substitute for the correct response while recognizing a letter as a word was same in all the groups of children, 8) ‘Visuo-spatial’ difficulties were observed among dyslexics while reading Kannada, 9) though, in individual cases there were behavioural symptoms like delay in speech and/or motor development; cross laterality, hyper-anxiety and impulsivity, there were no such symptoms common to most of the dyslexics, 10) the etiology of dyslexia could not be traced in all the cases, 11) the remedial programme was found to be effective in improving the accuracy of letter and word recognition to a considerable extent among all types of dyslexics, 12) the remedial programme was less effective in improving the speed of letter and word recognition and, 13) in almost all the dyslexics, the level of reading comprehension improved after the remediation.

The study organized by Rao (1986) on ‘Nature and Incidence of Reading Disability among School Children’ revealed that

- Reading disability was found in about 20% of students in the primary schools.
- Sex difference was not significant for reading disability.
- Students in rural areas were significantly backward compared to students in urban areas in reading skills.
- Reading disability was closely related to language deficiency in school children.
- The disabled readers were found to be very poor in the speech skills of language development namely, word meanings in isolation and context
and word synthesis, in some grammatical aspects of the language and in paragraph comprehension.

- Besides the language deficiency, poor socio-cultural background of the family, poor habits and lack of motivation for reading were found to be the casual factors of reading disability. Low reading achievement was found not to be the evidence of low reading potential, and the reading deficiency of children in several cases could be improved by remedial teaching and constant practice.

Reddy et al. (2009) in the article ‘Reading Disabilities: Identification, Assessment and Remedial Strategies’ explained the concept of reading difficulties/disabilities, prerequisites of good reading and characteristics of children with reading difficulty. The neurological, genetic, biochemical, environmental, maturational and nutritional factors associated with reading disability are dealt in detail. Further, the authors explained three identification phases of reading difficulties in children. They also suggested that strategic cues such as improving visual retention and sequential memory, auditory training, auditory discrimination, auditory segmentation, reducing reversal problem, promoting sensory perception, improving phonetic awareness, visual auditory perception for letter identification and sounds etc. are to be used in the remedial programmes to overcome reading disabilities.

Shaywitz et al. (2002) in an FMRI (Functional Magnetic Resonance Imaging) study investigated the phonological processing in dyslexic children. Of the 144 children scanned, 70 were dyslexic while 74 did not have reading impairment. The children ranged in age between 7 and 18 years. The experimental tasks, designed to differentially tap the component process of reading, largely mirrored those employed in their previous study with adults. The same baseline task, a judgement of line orientation, required the children to decide whether two groups of lines were the same (eg: Do \v
and \v match?). The authors chose to focus on two of the language related
tasks: the non word rhyme task (eg: Do “lete” and “jete” rhyme) and a
category task (eg: Are “corn” and “rice” in the same semantic category?). Word or symbol pairs were presented on a screen, and the participants were
required to respond to the task with a button press, pressing one button for
‘Yes’ and another for ‘No’. The behavioral performance of the dyslexic
participants was impaired relative to that of the control participants. For the
non-word rhyme and the category judgement tasks, dyslexic children scored
59% and 75% correct respectively, while the control children scored 79%
and 91% correct, respectively.

Simmons (1995) in his study examined the effects of explicit teaching
and peer tutoring on the reading achievement of learning disabled students
and non disabled, low performing readers in academically integrated class
rooms. The study found that explicit teaching students did not achieve
reliably better than controls; students in the explicit teaching plus peer
tutoring condition scored higher on reading fluency and comprehension than
did explicit teaching control students.

Umadevi (1997) conducted a research work entitled ‘Effectiveness of
a Remedial Programme on Improving Reading Comprehension Skills among
Dyslexic Children’. The sample of the study comprised 25 dyslexic children
identified from 612 students studying in class 1V English medium schools
selected randomly in Davengere city. The tools used to collect data included
Rutter’s Proforma, Auditory Reception Test, Aural Comprehension Test,
Academic Achievement Motivation Inventory, Reading Tests and Ravens
Coloured Progressive Matrices. The findings reported that there was a
significant difference between pretest scores on word recognition test of
classes I to IV obtained by dyslexic children who had been subjected to
remedial programme. The remedial programme was found to be effective in improving reading comprehension skills among dyslexic children.

2.2.2 Studies Related to Writing Difficulties

Berninger (2008) in his research work finds that students with dyslexia have problem in automatic letter writing and naming, which is related to impaired inhibition, verbal fluency and spelling problems. Results are discussed with reference to the importance of providing explicit instruction in the phonological, orthographic, and morphological processes of spelling and in composition.

Calhoun (2007) observes the popular but unsubstantiated belief that reading disability is the most prevalent type of learning disability (LD), that LD in mathematics is rare, and that LD in written expression is very rare. Reading, Writing and Arithmetic Diagnostic Tests were administered to 485 children. 65% of children had LD. The most common was LD in written expression (92 percent), either alone (50 percent) or in combination with LD in reading and/or mathematics (42 percent). Only 4 percent of the children had LD in reading alone, and 4 percent had LD in mathematics alone. Total LD percentages for reading and mathematics were similar (33 percent and 32 percent). Children with writing problems had far greater difficulty with compositional skills than with spelling.

Case-Smith (2002) reported the results of a study on the effects of school-based occupational therapy services on students’ handwriting. Twenty-nine students aged seven, with poor handwriting legibility and cognitive function within normal limits, received a mean of 16.4 sessions of direct occupational therapy services over the school year. Fifteen of the students had an educational diagnosis of learning disability, and eleven had a diagnosis of developmental disability. Ninety-five percent of the
intervention was one-on-one and included a variety of therapeutic approaches individualized to the student's needs. The therapists reported a high level of collaboration with the teachers. When compared with students who did not receive services, the intervention group showed significant increases in handwriting legibility, in-hand manipulation and position in space scores.

Ellis (1982) reports that children with writing problems or developmental dysgraphia are really not different from normal children and adults, who also have ‘slips of the pen’. Ellis classifies the various types of writing error as follows:

a) Reversal, eg: ‘gosd’ for ‘gods’

b) Orientation errors, eg: ‘boys’ for ‘dogs’

(This occurs with letters ‘pq’, ‘nm’, ‘ao’, ‘ru’, ‘hk’, ‘db’)

c) Contaminations-the fusion of two adjacent letters which is found in adults when they write quickly.

Graham and Madan (1981) list out many different approaches remedying handwriting disorders.

- One approach suggests improving the underlying visual motor processes.
- A second method focuses directly on producing correctly formed letters and words.
- A third approach emphasizes the use of prompts and cues and multi sensory stimulation.

Harrison and Berves (2007) in their work examined writing samples from 42 post-secondary students with or without writing difficulties. The samples were examined for evidence of difficulties with lower order transcription processes and higher order composition skills. Retrospective
reports on writing strategies were also obtained. The students with writing difficulties achieved significantly lower scores across both dimensions of writing than the students without difficulties. For those with writing difficulties, strategy reports indicated an awareness of difficulties with lower order writing skills and an over-emphasis on these skills during the writing process, compared to the students without writing difficulties.

Hetzroni and Shrieber (2004) investigated the use of a word processor for enhancing the academic outcomes of three students with writing disabilities in a junior high school. A single-subject design was used to compare academic output produced during class time with and without a computer equipped with a word processor. The number of spelling errors, number of reading errors, and the number of words used per text were counted, and the overall structure and organization of text were examined across all in-class materials. The data demonstrated a clear difference between handwritten and computer phases. In traditional paper-and-pencil phases, students produced outcomes that had more spelling mistakes, more reading errors, and lower overall quality of organization and structure in comparison with the phases in which a computer equipped with a word processor was used.

Lerner (1993) reported that individuals with speech and language disorders experiencing difficulty with learning disabilities also experience a similar difficulty with written communication. Common communication-related problems are poor handwriting, spelling, organizational skills, productivity and quality of writing. Difficulty with literary skills is a hallmark of learning disabilities. Reading and writing are the most typical target of technological interventions for persons with disability.

Reddy et al. (1999) in their article ‘Assistive Technology to Overcome Learning Difficulties in Children’ reported that learning
disabilities refer to the disorders in development of language, speech, reading, writing and associated communication skills needed for social interaction. Children with learning disabilities exhibit disorders due to poor visual perception, poor motor coordination, impulsivity, inattention, memory deficiency, poor self concept and self esteem. To overcome the reading, writing, spelling and arithmetic disabilities, assistive technology is of much use. Many forms of technology both high and low can help individuals with learning disabilities and compensate for their disabilities.

Sivakami (2000) in her research work found that 10 to 11% of children are facing learning difficulties in English at primary stage. Her study also denotes majority of students with learning difficulty experience word attack task as difficult in reading difficulties diagnostic test. Difficulties in writing aspects like letter slope, letter formation and word spacing are experienced by almost all learning disabled students in her study.

Vallies (1992) compared the oral and written testing of primary aged mainstreamed learning disabled students. The study compared the performance of four mainstreamed learning disabled students on oral and written tests in social studies. The study found superior test performance during oral testing replicated across all four students. She also suggests procedures for implementing oral testing by classroom teachers.

Watkinson and Lee (1992) studied the writing language abilities of learning disabled and non disabled children and found out that the differences in written expressions between learning disabled and non disabled middle school students matched by grade and sex, using eight curriculum based measures. All the learning disabled students were identified as having written language deficits. Non-disabled students showed
superior written expression skills, especially on production-independent measures.

2.2.3 Studies Related to Spelling Difficulties

Aburabia et al. (2004) in the study ‘Reading and Spelling Error Analysis of Native Arabic Dyslexic Readers’ conducted an investigation of reading and spelling errors of dyslexic Arabic readers ("n"=20) compared with two groups of normal readers: a young readers group, matched with the dyslexics by reading level ("n"=20) and an age-matched group ("n"=20). They were tested on reading and spelling of texts, isolated words and pseudo words. The results of the reading error analysis revealed a clear contribution of the uniqueness of the Arabic orthography to the types of errors made by the three different groups. In addition, the error profiles of the dyslexic readers were similar to the error profiles made by the younger reading-level-matched group in percentages and in quality. The most prominent types of errors were morphological and semi-phonetic, which highlighted the contribution of the Arabic orthography to these types of errors. Consistently, the profile of the spelling errors was similar in percentage and quality among the dyslexics and the reading-level-matched group but different from the age-matched group on the spelling measures. The analysis of the spelling errors revealed that the dominant type of error was mostly phonetic due to the limited orthographic lexicon.

Bishop et al. (2005) in the study ‘Effectiveness of Computerised Spelling Training in Children with Language Impairments: A Comparison of Modified and Unmodified Speech Input’ evaluated a computerised programme for training spelling in 8- to 13-year-old children with receptive language impairments. The training programme involved typing words corresponding to pictured items whose names were spoken. If the child made an error or requested help, the programme gave phonological and
orthographic cues to build up the word's spelling. Eleven children received this training with ordinary speech and eleven had the same programme but with speech modified to lengthen and amplify dynamic portions of the signal. Nine children were in an untrained control group. Trained children completed between 6 and 29 training sessions each of 15 minutes, at a rate of 3 to 5 sessions per week, with an average of over 1000 trials. Children were assessed before and after training. Trained children learned an average of 1.4 novel spellings per session. The trend was for children presented with modified speech to do less well than those trained with ordinary speech, regardless of whether they had auditory temporal processing impairments. Trained groups did not differ from the untrained control group in terms of gains made on standardised tests of spelling or word and nonword reading. This study confirms the difficulty of training literacy skills in children with severe language impairments. Individual words may be learned, but more general knowledge of rule-based phonological skills is harder to acquire.

Border’s (1973) study reveals that there are two main types of spelling disabled children. The first type, the dyscidetic dyslexic, has a visual problem and attempts to write words phonetically. So he or she might write ‘stah’ for ‘stars’, ‘hows’ for ‘house’, ‘muthr’ for ‘mother’. The second type, the dysphonetic dyslexic, makes errors which are similar to the original word visually, but bear no phonetic resemblance (eg class’ for ‘star’, ‘loose’, for ‘house’, ‘wutter’ for ‘mother’.) The first type, the dyscidetic dyslexic, is obviously attempting to use the phoneme – grapheme conversion route whereas the second type, the dysphonetic dyslexic, is attempting to use the lexical route.

Cassar et al. (2005) report that children with dyslexia are believed to have very poor phonological skills for which they compensate, to some extent, through relatively well developed knowledge of letter patterns. They tested this view in a study by comparing 25 dyslexic children and 25
younger normal children. Phonological skill was assessed using phoneme counting and non-word spelling tasks. The dyslexic children have difficulty in linguistic structures.

Darch et al. (2006) compared two instructional methods for teaching spelling to elementary students with learning disabilities (LD). Forty-two elementary students with LD were randomly assigned to one of two instructional groups to teach spelling words: (a) a rule-based strategy group that focused on teaching the students spelling rules (based on the "Spelling Mastery Level D" programme) and (b) a traditional instruction group that provided an array of spelling activities (i.e., introducing words in the context of a story, defining the meaning of words, sentence writing, and dictionary skill training) to teach the spelling of words. Daily instructional sessions lasting 30 minutes were conducted for 4 consecutive weeks. Four different word types (i.e., regular, morphological, spelling rule, and irregular) were introduced as instruction progressed. After receiving instruction in one of the instructional groups, the students were compared on scores from unit tests, a standardized test, a sentence-writing test, a transfer test, and a maintenance test. Overall results indicated that the rule-based strategy group using "Spelling Mastery Level D" was more effective in increasing the students’ spelling performance, particularly for the regular, morphological, and spelling-rule words.

Devi (2004) conducted a research on the effectiveness of different remedial measures to improve the spelling of fourth graders with learning disability by selecting subjects from schools located in Chandigarh. The sample comprised 39 learning disabled (LD) children selected from regular school-going children of IV standard. The major findings of the study were: (1) A significant difference was found between pretest and post test means of phonetic group. The remedial measures given for dyseidetic spellers
(Phonetic group) was useful for remediating the spelling problems of LD children. (2) There was a significant difference in the spelling performance between pre and post stages of dyseidetic (Visual) group. This shows that subjects in visual group have benefited from the visual orthographic technique. (3) A significant difference was found between pretest and posttest means of mixed group. LSRW (Listening, Speaking, Reading, Writing) technique proved effective in ameliorating the deficiencies in spelling among children of mixed group. (4) All the groups (Phonetic, Visual, and Mixed) gained equally and all the three techniques worked equally well. All the techniques had equal effect in improving the spelling performance of the children. (5) Differences between the posttests, DPT$_1$ and DPT$_2$ confirmed the stability of gains due to experimental treatment. (DPT$_1$ was administered 21 days after remediation and DPT$_2$ was administered 25 days after DPT$_1$). (6) Test of transfer of learning after remediation showed that the learning which occurred during experimental treatment got transferred to performance in English in general. (7) F-ratio obtained for number of trials in groups was insignificant. This revealed that subjects in three groups did not differ on the number of trials taken to learn a task of equal magnitude.

Erbas et al. (2006) find the effectiveness of the "cover write" method of teaching word-naming and spelling to two Turkish students with developmental disabilities. A multiple-probe design across three, 5-word sets was employed to assess the effectiveness of the intervention. The "cover write" method was modified to accommodate the learning needs of the students. Results of the study revealed that after instruction students named the words and spelled them correctly. Furthermore, maintenance and setting generality of word acquisition were assessed one week after instruction ended in an art class where it was found that the students named and spelled the words independently.
Gary et al. (2007) in the research work ‘Differential Effects of Two Spelling Procedures on Acquisition, Maintenance and Adaptation to Reading’ used alternating treatments design to assess the effects of a constant time delay (CTD) procedure and a cover-copy-compare (CCC) procedure on three students’ acquisition, subsequent maintenance, and adaptation (i.e. application) of acquired spelling words to reading passages. Students were randomly presented two trials of word lists from their respective curriculum under each condition once daily. Results suggest that both procedures were effective for helping students efficiently acquire spelling words, but the CCC condition resulted in the learning of more words for all participants, although less pronounced when instructional time was considered.

Jongejan et al. (2007) made a study to examine the basic literacy skills and related processes of 1st- to 4th-grade children speaking English as first language (L1) and English as second language (ESL). The performances of the L1 and ESL children on phonological awareness, word and pseudo word reading, and word and pseudo word spelling tasks were highly similar. The ESL children were at an advantage with regard to lexical access but performed more poorly on verbal working memory and syntactic awareness tasks. The results suggest that the main processes underlying L1 children's basic reading ability in grades 1 and 2, namely phonological awareness and lexical access, are of equal importance for ESL children. Phonological awareness remained the strongest predictor of word reading ability for L1 and ESL children in grades 3 and 4. However, the processes involved in L1 and ESL word reading and spelling appeared to vary at other points.

Nelson and Warrington (1974) find two types of spelling disabled children in their study. Those who have a reading and spelling difficulty combined and those who have only spelling difficulty. Children with
spelling problem alone tended to have difficulty in visualizing the word. In this case the visual lexicon was a problem area and usually the errors made were phonetically accurate (eg. the child might spell ‘yacht’ as ‘yot’). Children with a reading and spelling difficulty tended to have an underlying language problem and made both visual and phonological errors.

Snowling et al. (1983) observed that phonological awareness requires an understanding of the relationship between the letters or graphemes of printed words and the phonemes of spoken words. To decode words, children must translate the written or orthographic representation of a word into the corresponding phonological representation of the word. Early spelling development also requires an understanding of the association between a word’s orthographic and phonological representations. Children with phonology based speech errors often lack a strong foundation for mapping between these orthographic and phonological representations. These inadequate abilities are likely to continue throughout the school years unless they are addressed.

Srivastava, Sushila and Afiah (1992) in the study ‘Learning Disabilities Among Elementary School Children: Influence of Sex, Age and Religion’ focused on the identification of the learning disabled and the assessment of their ability in reading, writing, spelling, language and arithmetic. The results revealed that age had a significant influence on disability in reading, language, writing and spelling. There was no significant difference between boys and girls in their disabilities in reading, arithmetic, language and spelling but sex had a definite bearing on the writing disability of the learning disabled. The Hindus, Muslims and Christians did not differ significantly on the five types of learning disabilities.
Tsesmeli and Seymour (2006) conducted an exploratory study aimed to evaluate the spelling of derived words by dyslexic adolescents and to verify whether this is associated with lack of vocabulary and/or morphological knowledge. A cross-sectional reading-level design was employed in order to determine differences in spelling, derivational morphology and vocabulary tasks between dyslexic students aged 13+ and age-matched and reading level matched control groups. The study confirmed a profound spelling impairment of dyslexic students in comparison with two control groups but this was not associated with poor vocabulary in relation with their age-peers. In contrast, they exhibited lower levels of morphological knowledge than age-matched controls but equivalent with the reading level.

Viel-Ruma et al. (2007) in his research work, in order to improve the spelling performance of high school students with deficits in written expression, implemented an error self-correction procedure. The participants were two tenth-grade students and one twelfth-grade student in a programme for individuals with learning disabilities. Using an alternating treatment design, the effect of error self-correction was compared with a more traditional method of spelling practice. The intervention and follow-up phases were implemented over a 6-week period with maintenance checks conducted 4 and 8 weeks after the termination of instruction. Results indicated that the error self-correction procedure was superior to the traditional method of review during the intervention and follow-up phases, but some gains were lost during the maintenance phase.

Wright and Mullan (2006) investigated the effectiveness of the Phono-Graphix reading programme with ten learners, aged 9-11 years, assessed as having specific learning difficulties. Testing was carried out via initial and final analysis of the students' phonological processing skills,
reading and spelling ability over an 8-month intervention period. The students were instructed on a one-to-one basis and each received an average of 24.3 hours of instruction. Findings suggest that the Phono-Graphix programme did appear to improve the students’ phonological processing skills. Qualitative findings from the study also show overall positive perception of the Phono-Graphix intervention among the parents and class teachers involved. The study stressed on Phono-Graphix approach and makes a useful contribution to the literature on remediation strategies for dyslexic students.

2.2.4 Studies Related to Arithmetic Difficulties

Bhasi (2003) carried out a research work on ‘Remediation for Arithmetic Disorder: A Neuropsychological Perspective’. His remedial programme consisted of two components, neuropsychological remediation and content based arithmetic skills training, given sequentially to a group of 10 arithmetic disorder children. 7 children in the control group received neuropsychological remedial sessions for improvement of handwriting skills. Both the groups were comparable in the severity of arithmetic disorder at the pre-remediation assessment. The post-remediation assessment showed significant improvement in arithmetic skills in the treatment group but not in the control group, indicating that a combination of neuropsychological remediation together with content based arithmetic skills training is efficacious.

Cass et al. (2003) investigated the effects of manipulative instruction on the solving of area and perimeter problems by students with learning disabilities. A multiple baseline design was employed to test the effect of manipulative instruction on the perimeter and area problem solving performance of middle and high school students who had been diagnosed with LD in the area of mathematics. Modeling, prompting /guided practice
and independent practice in conjunction with manipulative training were employed to teach both perimeter and area problem solving skills. Analysis of data revealed that students rapidly acquired the problem solving skills, maintained these skills over a 2 month period and transferred these skills to a paper and pencil problem solving format.

Cawley and Miller (1989) reported that 8 and 9 year students with learning disabilities performed at a level equal to first-grade level on computation and applications. In another study they found that the mathematical knowledge of students with learning disabilities tends to progress approximately one year for every two years of school attendance.

Chauhan (2004) conducted a research work entitled ‘Effectiveness of different Strategies for Remediating Dyscalculia in Primary school Children’. The objectives of the study were: (1) To assess the impact of various intervention strategies to ameliorate the effect of dyscalculia and differences in this impact. (2) To find out gender differences and grade differences with regard to effectiveness of various remedial strategies. The members of sample located in southern Delhi were selected randomly. A sample of 84 students with dyscalculia from 2 and 3 grades were selected. A pretest and posttest control group design was used for the study. Wechsler’s Intelligence Scale for children, Diagnostic Test of Learning Disability, and Teacher’s referral forms were used to identify the children and Arithmetic Diagnostic Test by Rama was used to diagnose errors. The statistical techniques, like, mean, SD, ANOVA and t-test were used to analyze the data. The findings of the study were: (1) Cooperative learning, clinical mathematics interview and error detection and correction, all the three strategies contribute significantly to the remediation of dyscalculia for grade 2 and grade 3 students. (2) Grade 2 subjects improved more than grade 3 subjects. (3) Male students improved more than female students. (4) Means
indicate that clinical mathematical interview is more beneficial for the male subjects than female subjects of both grades 2 and 3. (5) Error detection and correction strategy is more beneficial for female subjects than male subjects of both grades 2 and 3. (6) Cooperative learning strategy group scored highest among all the three strategies for the male subjects. (7) Strategies when compared with each other did not differ significantly in effectiveness though means indicate some difference.

Cirino et al. (2007) conducted a study titled ‘Cognitive Arithmetic Differences in Learning Difficulty Groups and the Role of Behavioral Inattention’. The objectives of this study were to (1) Evaluate group differences in specific arithmetic competencies among students with various types of learning difficulties (LD) and (2) Examine the influence of attention behaviors on possible group differences. Participants were a community sample of 291 third- and fourth-grade students with reading difficulties (RD) and/or Math difficulties (MD) and with no LD (51 MD, 66 RD, 89 MD + RD, and 85 Non LD students). Students were administered computerized measures of cognitive addition, subtraction, and estimation (accuracy and response times), as well as other measures. Groups were compared with and without covariation for behavioral inattention and their interactions. Small sum addition, thought to reflect retrieval processes, estimation accuracy, and number knowledge, did not show differences between MD and MD + RD students, although both showed lower performance than the RD and Non LD groups. Attention behavior had a variable impact, most typically making group differences larger, but did not alter the general pattern of group differences, except in the case of estimation.

Englert et al (1987) investigated the problem solving performance of LD students and their peers. Both sets of pupils were given a number of addition word problems with irrelevant linguistic and numerical information
embedded within them. Data indicated that the regular class students revealed greater accuracy and speed in solving the problems than their peers. Analysis also supported the conclusion that LD students experienced greater difficulties than did non LD students in solving problems containing irrelevant numbers.

Garderen and Montague (2002) investigated students’ use of visual imagery while solving mathematical problems. Students with learning disabilities (LD), average achievers and gifted students in sixth grade (N=66) participated in this study. Students were assessed on measures of mathematical problem solving and visual spatial representation. Visual spatial representations were coded as either primarily schematic representations that encode the spatial relations described in the problem or primarily pictorial representations that encode persons, places or things described in the problem. Results indicated that gifted students used significantly more visual-spatial representations than the other two groups. Students with LD used significantly more pictorial representations than their peers. Successful mathematical problem solving was positively correlated with the use of schematic representations; conversely, negatively correlated with the use of pictorial representations.

Kingma (1984) conducted a study to find out how far intelligence tests and Piagetian tasks are effective as diagnostic instruments to asses kindergarten and primary school arithmetic disabled children. The samples were tested with Piagetian tasks (seriation, conservation and multiple classification), initial arithmetic tasks (number line comprehension and number language tasks) and the Culture Fair Intelligence Test Form I. It was shown that of the Piagetian tasks, the combination of conservation and seriation were clearly superior to the intelligence test, were equally good predictors for number line comprehension. Data suggests that of the
Piagetian tasks, seriation might especially serve as a valuable diagnostic
instrument.

Kunsch et al. (2007) conducted a research work entitled ‘The Effects of Peer-Mediated Instruction in Mathematics for Students with Learning Problems: A Research Synthesis’. The purpose of this synthesis was to summarize the effectiveness of peer-mediated interventions on the mathematics performance of both students with disabilities and those at risk of mathematics disabilities. Results indicate that peer-mediated interventions in mathematics are moderately effective for improving students’ mathematics performance.

Pooja (2004) conducted a research work entitled ‘Arithmetic Error Profile of Learning Disabled Children: Improving Arithmetic Skills’. The study was confined to 30 children having learning disability in arithmetic. The subjects were grade II students studying in public schools of Karnal city in Haryana. Experimental method was used for the present research study. It employed pre-test, treatment, post-test design. A sample of 30 students of grade II were drawn from English medium public schools of Karnal city and was divided into 2 equal groups as control group and experimental group. The experimental group was treated with an intervention programme consisting of 3 strategies as Concrete Material Strategy, Touch Math Programme, and Multi-sensory Basic Operation Programme. The treatment period was in a sequential order for a duration of eight weeks. No remedial teaching or treatment was given to control group. The design involved 3 operational stages as identification stage, treatment stage and processing stage. The first stage involved identifying subjects on the basis of previous academic records, Raven’s Coloured Progressive Matrices Test (Intelligence Test) and finally drawing out a sample of 30 learning-disabled children by administering self developed Arithmetic Achievement Test. This stage
lasted for four weeks. The treatment stage was for a period of eight weeks. In this stage the experimental group was given treatment through a set of intervention strategies planned and developed as a part of the intervention programme. After the treatment period was over, again the Arithmetic Achievement Test was administered as posttest stage. The intervention strategies were found to be effective in developing arithmetic skills.

The main findings were: (1) The prevalence rate of learning disability in arithmetic among grade II students came out to be 7.31 percent. (2) The identification of types of errors committed by learning disabled children revealed that the highest error rate was in the dimension of ‘multiplication’ followed by ‘subtraction’ and ‘addition’. It reflected that the average 55-60% of errors were committed by learning disabled children in arithmetic. (3) Teaching through a set of intervention strategies i.e. Concrete Material Strategies, Touch Math Programme, and Multi-sensory Basic Operation Programme was found to have a significant positive effect on arithmetic skills on the basis of comparison between scores of experimental and control groups on pre-test and post-test. (4) The efficacy of intervention strategies i.e. Concrete Material Strategy, Touch Math Program, and Multi-sensory Basic Operation Programme further proved to have significant positive effect on number concept, ‘addition’ and ‘subtraction’ facts except ‘multiplication’ fact of arithmetic on the basis of comparison between pre-test, post-test error scores of experimental group.

Reddy and Ramar (1998) developed instructional video programmes in mathematics for the slow learners of standard VIII to measure its effectiveness and advantage over traditional lecture method. Experimental method was adopted for the study. The sample comprised 50 slow learners of standard VIII from a higher secondary school; they were divided into two groups on the basis of systematic random sampling technique and were
placed in an order of merit. Every alternate student was placed in the control group; the others formed the experimental group. There was also a group of normal students to assess the extent to which the video instructional method enabled the slow learners to cope with normal students. The experiment was conducted for 30 working days, after which a post-test was conducted on all three groups of students. After statistical treatment of the data, the superiority of video instruction over the traditional lecture methods in helping slow learners of standard VIII to learn mathematics was inferred.

Rourke (1993) in his study identified two subtypes of children with learning disability. The non-verbal learning disabilities group (NLD) was having significant problems in visual perceptual organization, psychomotor and concept formation skills leading to difficulties in arithmetic calculation as well as development of maladaptive social behaviour while the other group (RS-Reading Spelling group) was with deficits mainly in the verbal and auditory perceptual areas.

Singh (1981) conducted a study on the effects of peer tutoring in Mathematics skills of learning disabled students. Results indicated that peer tutored group of LD students made significant gains in both mathematics computation and mathematics concepts application scores compared to non peer tutored students.

Slad and Russell (1971) in their study find multiplication to be a more difficult operation than addition or subtraction. In their cases, the relative deficiency in multiplication has stemmed from a faulty grasp of multiplication tables. In general long mathematical problems cause difficulty for children with a calculation problem, as they require the child to retain a number of operations and to apply them in a correct sequence.
Swanson (1993) conducted a study on the information processing analysis of learning disabled children’s problem solving. The sample for the study consisted of 32 learning disabled, 17 gifted and 14 normally achieving students from grades 4 and 5. Results revealed that learning disabled children’s problem solving performance reflected after the integration of metacognitive skills with online processing and problem solution.

2.3 Studies Related to Self Concept and Learning Difficulties

Bender and Huntington (1993) in the article ‘Adolescents with Learning Disabilities at Risk? Emotional Well-being, Depression, Suicide’ concluded that adolescents with learning disabilities experience higher levels of trait anxiety and have higher prevalence of somatic complaints as well as reduced self esteem.

Brockelman et al. (2005) conducted a series of group and individual interviews in which 25 university students with a variety of disabilities discussed their experience of disability. Transcripts of the interviews were analyzed qualitatively using an inductive procedure. Data were then sorted by gender and by hidden versus visible disability. They presented themes related to self-concept; specifically how the students (1) thought of themselves, (2) presented themselves to others, (3) imagined others’ views of them, and (4) perceived the support they received. Results of these analyses indicate that students with disability show poor self concept when compared to normal ones of their age group.

Chapman and Tunmer (2003) in their study on reading difficulties, reading-related self-perceptions, and strategies for overcoming negative self-beliefs reviewed the development of achievement-related self-system factors in relation to young children's reading acquisition. Reading self-concept, academic self-concept, and reading self-efficacy appear to develop in
response to initial experiences in learning to read. For children who experience initial and ongoing success or difficulty in reading, development of relations between reading performance and self-system factors occurs within the first year of schooling. Their study also shows that phonological processing ability and letter-name knowledge at the outset of schooling not only predict subsequent reading performance but also academic self-concept and reading self-efficacy. Children who are deficient in phonological processing or state a preference for using text-level cues for identifying unfamiliar words in the text rather than word-level information tend to develop difficulties in reading as well as negative reading-related self-perceptions. To overcome both skill deficiencies in reading and the achievement-related self-beliefs that develop in response to reading difficulties, attention should be given to the development of word-level skills. In addition, the study recommended the use of attribution retraining methods, combined with appropriate skills training for overcoming children's negative self-beliefs.

Dyson (2003) examined the global self-concept, academic self-perception, social competence, and behavioral problems of 19 children with learning disabilities within the family context. Comparisons were made between the target children and their close-age siblings, and family psychological correlates also were identified. The participants were administered child assessment scales and were rated by their parents, who also completed family psycho-social measures. The results show that although children with learning disabilities do not differ from their siblings in global self-concept and academic self-perception, their parents rated them to have less social competence and more behavior problems than their siblings.
Galbraith and Alexander (2005) made case studies on a group of primary school pupils to examine the efficacy of an integrated, eclectic approach to the teaching of literacy, including whether constructs such as self-concept and self-esteem have influence on academic achievement. Interactive teaching methods and discussions based on the principles of Solution Focused Brief Therapy were given that helped to improve self-esteem and internalise locus of control in children. Significant improvements in the reading scores of the target children are concurrently achieved with improved self-esteem and locus of control scores, suggesting the usefulness of the teacher’s role as instructor, scaffold and iconoclast.

Gunnel (2007) interviewed 75 teenagers and young adults to investigate how young people with dyslexia experienced school in terms of well being, educational achievement, self-esteem, peer relations and belief in their future. Results from earlier studies suggest that secondary emotional problems are common. The first six grades in school were experienced by the interviewers as full of distress and failure for a majority. Though peer relations were often good, many had experienced bullying. As they grew older, problems were more limited to reading and writing activities. This was thought to be an effect of acknowledgement and compartmentalization of the disability along with choices of school curricula and occupations in line with the subjects' talents and capacities. Academic self-esteem seemed to be low, and most subjects had chosen vocational programmes in secondary school and had decided not to go to college. The most optimistic subjects were those who had finished school and were permanently employed. Early diagnosis along with careful explanation of the disability was recommended as well as the encouragement of dyslexic children in areas where they can do well and which make them view themselves positively.
Humphrey and Mullins (2002) examined self-concept and self-esteem in two groups of dyslexic children [mainstream placement and SpLD unit placement, total (N=63)]. Interviews and a questionnaire were utilised, giving a mix of qualitative and quantitative data. A control group of 57 children without learning difficulties was assimilated into the research design. The main findings were that the presence of dyslexia produced marked effects on the self-concept and self-esteem of children, although this was more apparent in the participants attending mainstream schools than those in SpLD units. The qualitative data revealed that children with dyslexia felt isolated and excluded in their schools, and that, typically, up to half were regularly teased or bullied.

Mc Lean (1997) in a study of 69 high achieving and 55 low achieving high school students in Northwestern Alberta found that high achievers had significantly more positive scores on motivation for schooling, academic self-concept, reference-based academic self-concept, locus of control (internal), and instructional mastery. Locus of control was the strongest discriminator between groups.

Pajares, F. (2003) examined the contribution made by the self-efficacy component of A. Bandura's (1986) social cognitive theory to the study of writing in academic settings. In his research work a brief overview of Bandura's social cognitive theory and of self-efficacy is first provided, followed by a description of the manner in which writing self-efficacy beliefs are typically operationalized and assessed. This is followed by a synthesis of research findings that address the relationship between writing self-efficacy, other motivation constructs related to writing, and writing outcomes in academic settings. These findings demonstrate that students' confidence in their writing capabilities influences their writing motivation as well as various writing outcomes in school.
Schunk, D.H. (2003) indicated that perceived self-efficacy, or students’ personal beliefs about their capabilities to learn or perform behaviors at designated levels, plays an important role in their motivation and learning. Self-efficacy is a key mechanism in social cognitive theory, which postulates that achievement depends on interactions between behaviours, personal factors, and environmental conditions. Self-efficacy affects choice of tasks, effort, persistence, and achievement. Sources of self-efficacy information include personal accomplishments, vicarious experiences, social persuasion, and physiological indicators. At the outset of learning activities, students have goals and a sense of self-efficacy for attaining them. Self-evaluations of learning progress sustain self-efficacy and motivation.

2.4 Studies Related to Achievement Motivation and Learning Difficulties

Abouserie (1995) conducted a study on 135 undergraduate students. He suggested that students’ personality traits in general and their self esteem and achievement motivation in particular, have a substantial influence on their approaches to study and to levels of knowledge processing.

Albaili (1997) studied 168 undergraduate students at the United Arab Emirates University. ‘Learning and Study Strategies Inventory’ is used to examine the differences between low, average and high achieving students. They discovered that motivation was the powerful discriminating factor separating the students.

Chattopadhyay et al. (1996) conducted a research work titled ‘Learning Disabilities and Poor Motivation to Achieve due to Prolonged Iodine Deficiency.’ The effect of prolonged iodine deficiency on learning and motivation was studied. One hundred male children matched for age,
socioeconomic status, and formal education were selected from both severely iodine deficient (SID) and mildly iodine deficient (MID) villages. Mean urinary iodine excretion was significantly lower in the SID than in the MID group (219.84 +/- 57.52 compared with 449.14 +/- 32.31 nmol/L, P < 0.001). The serum thyroxin concentration was significantly lower (90.36 +/- 6.46 compared with 123.70 +/- 15.42 nmol/L, P< 0.001) and serum thyroid stimulating hormone (TSH) was significantly higher in the SID group than in the MID group (6.23 +/- 0.34 compared with 4.85 +/- 0.28 mU/L, P< 0.01). The children were administered maze, verbal, and pictorial learning tasks and a test of motivation. The results showed that SID children are slow learners compared with MID children. In both groups the rate of learning over trials was superior in younger (aged 9-12) children although the initial performance of older (aged 12-15) children was better (P < 0.01). SID children scored significantly lower than MID children on the achievement motivation scale (P < 0.01). The results are suggestive of neural impairment as well as poor socio-psychologic stimulation, resulting in learning disability and lowered achievement motivation.

Cox and Guthrie (2001) in the article ‘Motivational and Cognitive Contributions to Student’s Amount of Reading’ revealed that motivation, strategy use and past reading achievement all may be expected to predict reading amount. To examine these variables, a total of 251 students in grades 3 and 5 were administered questionnaires of these constructs and a reading test. Results showed that the amount of reading for enjoyment was predicted most high by motivation, when all other variables were controlled statistically in multiple-regression analyses. In contrast, the amount of reading for school was predicted most highly by strategy use, when all other variables were controlled.
Dev (1998) reviewed research results from 14 studies that focus on the intervention methods practiced to enhance academic intrinsic motivation for students with learning disabilities (LD) and measures used to assess it. Data analysis showed that intrinsic motivation strongly related to academic achievement in students with LD.

Elbaun and Vaugh (2003) conducted a study entitled ‘For Which Students with Learning Disabilities are Achievement Motivation Interventions Effective?’ and found that persons with learning disabilities frequently encounter certain negative experiences (e.g. perceived intellectual inadequacy, a disproportionately high incidence of academic and social failure, social stigmatization and discrimination etc.) and they are generally viewed as being at risk for low achievement motivation.

Fontaine (1994) studied the relationship between achievement motivation at school and child-rearing practices and found that more motivated children live in more rigidly structured families. Fontaine suggested for more research on the differential influences of social context and gender.

Franzis et al. (2006) conducted a study entitled ‘Academic underachievement: Relationship with cognitive motivation, achievement motivation, and conscientiousness’. In this study, the role of need for cognition, achievement motivation, and conscientiousness on academic underachievement were investigated. Forty-seven male and forty-six female students in grades 7 to 10 participated in the study. Student attributes were assessed by self-report measures, school performance by academic grades, and intellectual abilities by a standardized structure of intelligence test. The study result revealed that need for cognition, achievement motivation and conscientiousness has contributed the most to the explanation of under achievement.
Ginsburg and Bronstein (1993) examined familial factors in relation to 93 fifth graders’ motivational orientation and academic performance. High parental surveillance of homework, parental reaction to graders that included negative control, uninvolvem ent or extrinsic reward and over and under controlling family styles were found to be related to children’s extrinsic motivational orientation and low academic performance.

Jegede (1994) reports on a study of 160 Nigerian secondary students to determine the influence of achievement motivation and gender on performance in English language learning. It was found that if adequately motivated, the students are capable of mastering English. He affirmed that there is no gender difference in English language performance.

Maqsud and Coleman (1993) asserted that parents have a strong influence on the development of their children’s achievement motivation. They also reported a study of 180 Bophuthatswance adolescents to determine the effects of living in a boarding school or with family and found significantly higher achievement motivation scores for the adolescents living with family.

Oxford (1993) reported a study in which 107 students participated exploring factors that influence satellite-delivered language achievement. Of the factors (motivation, learning style, learning strategy use, gender, previous language learning experience, and course level), student motivation was the most significant determiner, followed by learning strategy use.

Schultz (1993) examined relationship between socio-economic advantage and academic performance in an urban elementary school population of 130 African-American and Hispanic fourth and sixth grade students. Results indicate that socio-economic advantage and achievement
motivation are significant mediators of academic performance among minority children, independent of intellectual ability.

Tuckman (1996) reported a study where two experiments involving 226 college students were conducted to determine the relative effectiveness of increasing students’ intensive motivation for studying and prescribing a text-processing strategy for them to use in studying. Findings suggested that the use of students’ acquired learning strategies depended on their motivational levels.

Wang and Guthrie (2004) examined the extent to which motivational processes facilitate the comprehension of texts, and the extent of the role of culture in children's motivational processes of text comprehension. Relationship between intrinsic and extrinsic motivation, the amount of reading, past reading achievement and text comprehension were examined by utilizing structural equation modelling. Fourth-grade students (187 U.S. and 197 Chinese) were administered a reading test and two questionnaires regarding reading motivation and reading amount. A final model fit the data well, showing that intrinsic motivation predicted text comprehension for both student groups after controlling all other variables. Extrinsic motivation negatively predicted text comprehension except when associated with intrinsic motivation. Reading amount did not predict text comprehension after controlling motivational variables. The study attributed to the cultural influences on reading motivation, reading amount and comprehension.

Whitehead (2003) in his research observed the relationship between social class, notions of masculinity, intelligence and achievement in 16-year-old boys in co-educational comprehensive schools in England and Wales. The obvious link between educational qualifications and occupational success, central to the middle-class ideal of masculinity, along with the strong relationship between social class and academic achievement has led
to the assumption that for males extrinsic motivation (the desire for recognition, high-status employment and high earning power) is the key to academic success. The results of the research reported here challenge that assumption by showing that intrinsic motivation is a much stronger predictor of achievement than extrinsic motivation.

Wigfield et al. (2004) in ‘Children's Motivation for Reading: Domain Specificity and Instructional Influences’ discussed the nature and domain specificity of reading motivation and presented initial results that examined how 2 reading instructional programmes, Concept Oriented Reading Instruction (CORI) and multiple Strategy Instruction (SI), influenced 3rd-grade children's intrinsic motivation to read and reading self-efficacy. Each reading programme occurred during the fall of the school year and lasted 12 weeks. Approximately 150 third-grade children participated in CORI; 200 third-grade children participated in SI. Results of pretest and posttest analyses of children's responses to a reading motivation questionnaire showed that children's intrinsic motivation to read and reading self-efficacy increased only in the CORI group.

Wigzell and Al-Ansari (1993) demonstrated that the problem of failure and underachievement in foreign language learning is associated with negative attitudes and poor motivation rather than lack of aptitude.

2.5 Studies Related to Personal Adjustment and Learning Difficulties

Bender and Golden (1998) in their research work on adaptive behaviours of learning disabled and non learning disabled children found out that learning disabled experienced poorer educational adjustment as compared to normal children.

Bharathi (1984) revealed that girls perceived themselves better adjusted than boys. No age difference was found with respect to adjustment.
Gitanjali (2004) examined the personality characteristics of 180 boys and girls of ages 8, 9, and 10 with learning disabilities (LD) in 3rd, 4th, and 5th grade in urban and rural primary schools of Andhra Pradesh, India. The subjects were identified based on their scholastic achievement on a spelling dictation test, an oral reading test, a reading comprehension test and an arithmetic test developed specifically for the purpose, along with mental ability tests--Raven's Standard Progressive Matrices and Draw-A-Man. An adapted version of the Children's Personality Questionnaire (CPQ) was administered to the subjects with LD and a comparison group of children without learning disabilities (NLD). Examination of scores obtained by LD and NLD subjects on the CPQ portrays the LD child as having problems in social and emotional adjustment. Further, the older LD children tended to show a more maladaptive behavioural disposition than the younger, and there was a significant gender effect among LD children.

Hema (1995) found that boys and girls in the secondary schools of Kerala differ in their personal adjustment. Girls have better personal adjustment than boys. Rural pupils have more problems than the urban group.

Iqbal and Gupta (2006) studied self esteem and adjustment of children with learning disabilities. Sample of the study consisted of 40 children. 20 were children with learning disabilities and 20 were normal children. Self esteem was measured by Self Esteem Inventory developed by Cooper Smith (1981) and Adjustment Inventory for school students by Sinha and Singh (1984). t-test showed that children with disabilities had lower self esteem than normal children in the domain of general self, home-parent and total self esteem. However, no significant difference was found between these two groups on social self-peer and school academic domains of self esteem. The adjustment scores showed that children with learning disabilities had
significantly poorer adjustment than normal children in all the areas assessed i.e. educational, emotional, social and in total adjustment.

Iyer (1977) in a study of factors relating to mathematic achievement of secondary school pupils found it having a definite relation with personal adjustment.

Jarvis and Justice (1992) revealed that learning disabled children had poor emotional adjustment. Social sensitivity and emotions are important dimensions of adjustment because adjustment is all about balancing between internal and external demands and postponing some of the immediate needs and demands.

Mathewson (1997) conducted a study of personality factors related to achievement in Science. The survey revealed that the mean scores of normal achievers were significantly lesser than the mean scores of underachievers in text anxiety and achievement. Personal adjustment, social adjustment, social facilities and self acceptance were accounted with the cognitive outcomes of the total student population.

Nair (1983) found that the personal adjustment variable facilitates achievement in secondary school biology. Nair (1999) compared personality variables of regular and correspondence pre-degree students and found that regular students were personally well adjusted than correspondence students. Another study by Nair (1999) on personality and familiar variables discriminating between over and underachievers in secondary school Science and Mathematics showed no significant difference in personal adjustment of over and underachievers in Science.

Poulose (1987) found that personal adjustment has a significant influence on the process outcomes of university entrants.
Rao (1970) in a study relating to scholastic achievement found that high achievers differ significantly in their personal adjustment.

Ryan et al. (1999) in their study titled ‘Psycho-Social Adjustment Factors of Postsecondary Students with Learning Disabilities’ examined selected issues addressing the psycho-social adjustment of postsecondary students with learning disabilities (LD) in comparison to their peers without learning disabilities (NLD). The study explored psycho-social issues such as self concept, self-awareness, and other areas related to independence, academics, and goal setting. The sample consisted of 110 students: 51 students with learning disabilities, and 59 students without disabilities who were not significantly different in gender or age. The data indicate, in general, lower levels of awareness, acceptance, and expression of affective characteristics among students with LD.

Shivappa (1980) in a study of the factors affecting academic achievement of high school pupils noticed that personal adjustment is a correlate of achievement.

2.6 Studies Related to Social Adjustment and Learning Difficulties

Broder et al. (1981) reported that learning disability was strongly correlated with juvenile delinquency. In a study on 10 year old boys with learning disabilities, they found high rates of reading retardation and antisocial behaviour. The results of the study showed a strong association between reading retardation and antisocial behaviour.

Cartledge et al. (1986) in their research on ‘Social Skills and Social Perception of LD and Non-handicapped Elementary School Students’ studied twenty-six pairs of elementary-aged LD and non handicapped children. They were assessed individually on social perception (empathy) and social skills measures. Empathy was determined by the children's
responses to stories involving various emotional situations, and was defined both as their tendency to identify with the emotion another person is experiencing (empathy-1) as well as their ability to label emotions in others (empathy-2). Social skill was measured by teacher ratings of the subjects on the Social Behaviour Assessment (SBA). With the exception of the Task-Related category on the SBA, statistically significant differences were not found between the two subject groups on the empathy and social skills measures. Moderate correlations between social skill and empathy were obtained only for the non handicapped children. Empathy-1 and -2 appeared to measure distinct skills, thus relating differently to the social skills assessed. These findings show a relationship between social skill and social perception, particularly with reference to the usefulness of social perception instruction of learning disabled individuals.

Cornwell and Bawden (1992) examined the relationship between specific reading disabilities and aggressive behaviour. There was not enough evidence to conclude that reading disability causes aggressive or delinquent behaviour; although limited evidence suggested that reading disability may worsen pre-existing aggressive behaviour.

Denise and Maxine (1997) studied the discourse processes underlying social competence in children with language learning disabilities. They found out that children with both a language impairment and a learning disability are at risk for poor social competence. A developmental–organizational perspective was used to explore processes underlying risk for poor social competence among language learning disabled children. To this end, the relative influences of language learning disability and social discourse skills on social competence were examined in 50 language learning disabled (LLD) and 50 control (non-LLD) children aged 8–12 years. Findings indicated that social discourse skills mediated the relation
between LLD status and children's social competence. Specifically, in the domain of social discourse, figurative language was the strongest mediator of the effect of LLD status on social competence. Additionally, differences were confirmed between the LLD and non-LLD group in two domains of social discourse, recreating sentences and figurative language, as well as social competence. Two other domains of social discourse, understanding ambiguous sentences and making inferences, did not discriminate the groups.

Fornessa and Kavale (1996) in a meta-analysis explored the effectiveness of social skills intervention for children with learning disabilities. The findings of the study are:-

1. Students who participated in social skills intervention showed modest gains as a result of their treatment.

2. Sixty-five percent of students who participated in social skills intervention reported that their social status increased as a result of their treatment. Their peers and teachers, however, evaluated the effects of social skills intervention for students with LD more modestly.

3. More than 6 out of 10 students with LD also received benefit from social skills training in self-concept, social problem solving, and social competence. Fewer had improvement in social interactions or locus of control.

4. Teachers were not impressed with the impact of training on social adjustment and stated that academic competence was not affected by such training.

Greenham (1999) assessed the extent to which difficulties in psychosocial adjustment are characteristic of broadly defined learning disabilities
(LD) and of specific patterns of academic and neuropsychological assets and deficits. Overall, a majority of children and adolescents with LD are in the normal range of peer acceptance and socially competent behaviour. Some measure of difficulty in these social assessments is observed in approximately one third of the children and adolescents with LD, compared with 10 to 15% of non-LD controls. Similarly, internalized emotional symptoms of depression and anxiety are assessed as somewhat higher for individuals with LD than for non-LD controls but are within the normal range of scores. Externalized emotional behaviours, specifically aggression, delinquency, and hyperactivity, are problematic but these too are at subclinical levels. In the few studies that examine psycho-social adjustment for subtypes of LD, there is some evidence that individuals with nonverbal learning disabilities are at much greater risk for personality disturbance and behaviour problems.

Hinshaw (1992) in his extensive review of issues pertaining to the relationship between externalizing behaviour problems and academic underachievement, stated that in childhood, inattention and hyperactivity were stronger correlates of academic problems than aggression. However by adolescence, antisocial behaviour and delinquency were clearly associated with underachievement. Overlap between externalizing behaviour problems and learning difficulty often begin during the pre school years, with significant association documented before the onset of formal schooling.

Malka and Michal (1994) in their study ‘Learning Disability Subtyping, Loneliness, and Classroom Adjustment’ identified patterns of social-emotional subgroups among students with learning disabilities. The sample consisted of 122 students from 12 self-contained classes for students with learning disabilities situated in regular schools in Israel. Through cluster analysis using measures of loneliness and externalizing and
internalizing behavioural maladjustment, four subgroups of students were identified: two non-lonely groups—one behaviourally adjusted and the other with externalizing maladjustment; and two highly lonely groups—one with high externalizing maladjustment, the other with high internalizing maladjustment.

McCromick (2000) in the research work for improving social adjustment in children with attention deficit hyperactivity disorder, diagnosed ninety five children consecutively for two years. Difficulties with peer relations were commonly seen in children with ADHD. Sending motivational letters helped to improve social adjustment in these children. The data suggested that busy practitioners might consider incorporating this successful, and time-efficient, intervention into their ADHD treatment regimens.

Montague (2007) provides an overview of research-based interventions that incorporate self-regulation strategies to improve mathematics performance of students with learning disabilities (LD) at the elementary, middle, and secondary school levels. The author explains that self-regulation is a metacognitive function essential to academic success. Students with LD are notoriously poor at self-regulation and must be taught explicitly to monitor and control their cognitive activities as they engage in academic tasks such as mathematical problem solving.

Ritter (1989) estimated the social competence and problem behaviour of 51 adolescent girls with learning disability using Child Behaviour Check List. The researcher identified poor social competence and elevated problem behaviours in learning disabled group compared to adolescents without learning disability.
In the Isle of Wight studies, Rutter et al. (1976) found that one quarter of the children with specific reading retardation showed antisocial behaviour. High rates of conduct problems, restlessness, poor concentration and over activity were seen among retarded readers in middle childhood.

Toro (1990) did a comparison of 86 learning disabled children, aged 7-11, and 86 age-matched controls and found that subjects were able to generate fewer alternatives for solving social problems, showed less adaptive assertiveness and tolerance for frustration, exhibited more classroom behaviour problems, displayed less personal and social competence, and had more family background difficulties.

Williams and McGee (1994) using data from a longitudinal study of child development in New Zealand (N=698) examined relationships between early reading attainment and antisocial behaviour at ages 7 and 9 years and subsequent reading and delinquent behaviour in adolescence. While reading did not directly influence later delinquency, antisocial behaviour during the early school years was strongly predictive of delinquency at age 15 years, particularly for boys. Reading disability at 9 years of age predicted conduct disorder at age 15 in boys, but not in girls.

Wiener (2004) in her study ‘Do Peer Relationships Foster Behavioral Adjustment in Children with Learning Disabilities?’ reviewed peer relations and social skills of children with learning disabilities (LD). Two risk models are discussed. The single-risk model suggests that for some children with LD, social skills deficits are inherent in the disability. These deficits lead to problems with social relationships, which foster internalizing behaviour problems. The multiple-risk model suggests that internalizing and externalizing behaviour problems typically result when more than one risk factor is present. These additional risks might include comorbid attention-deficit/hyperactivity disorder, poverty, inadequate educational
accommodations, and ineffective parenting. However, the risk of behaviour problems is reduced if children with LD are able to establish healthy social relationships. This article demonstrates how the peer relationships of children with learning disabilities (LD) are pivotal to their behavioural adjustment.

Zera and Lucian (2001) made a quantitative synthesis of 50 studies in which the relationship of self organization and learning disabilities were studied. The investigator found out that related with learning disabilities there arise disabilities in reading, maths, attention, working memory, social competence and executive functioning.

2.7 Studies Related to Home Environment and Learning Difficulties

Anna Elizabeth Kuruvilla (1999) investigated creativity among the learning disabled children. The objectives of the study were: 1) To assess the level of creativity of the learning disabled children 2) To compare the creativity scores of the learning disabled boys and girls of std IV and V studying in government, government-aided and corporation schools 3) To establish the relationship between creativity scores of learning disabled and economic status of the family and 4) To determine if creativity scores of the learning disabled are influenced by the literacy of their parents. The results show that: 1) Learning disabled children are creative. 2) Differential analysis of the creativity scores of the learning disabled boys and girls show that boys are more creative than girls. 3) Differential analysis made between the samples of std IV and V revealed that V std children are more original than their juniors. 4) Learning disabled children of government-aided schools were found to be better than those in government schools in flexibility and originality. 5) Corporation schools are better than government-aided schools in flexibility; whereas, in originality government-aided schools were better. 6) In all the aspects of creativity the performance of corporation schools was
better than government schools. 7) Correlation analysis shows that creativity scores of the learning disabled are not influenced by the literacy status of parents and, 8) The economic status of the family and creativity scores of learning disabled were found to be unrelated.

Gregory (2001) claimed that learning is enhanced when interacting with more knowledgeable people. As part of social-constructivist theory, parents scaffold or assist children’s performance by modelling the types of responses expected to particular questions with the goal that children will eventually respond using such responses themselves. This pattern is often noticeable in storybook sharing. Parents also support children’s understanding of text by rephrasing and explaining the text meaning and sequence of events. Older siblings of young children sometimes assume responsibility for reading to children, which exposes young children to a function of print, new vocabulary, as well as question-answer patterns that the children will often experience in early schooling.

Heath (1983) found out that there are many social factors that relate to children’s reading acquisition. Parents play a key role in this socialization process. Because some family practices are more developmentally linked with school practices than others, engagement of family in specific activities may enhance the development in the aspects of conventional literacy.

Howell et al. (2007) in ‘Early Child and Family Characteristics as Predictors of Later Loneliness in Children With Developmental Disabilities’ observed that children with developmental disabilities often reported having few friends. Researchers have tended to focus on social skill deficits, neglecting other potent predictors of children's feelings of loneliness. In a sample of 82 children with developmental disabilities, they examined family income and emotional climate as predictors of children's reported feelings of loneliness at school during middle childhood (age 10). Children with lower
levels of externalizing behaviour problems were from families with a more positive family climate, as indicated by the Family Environment Scale.

Janes et al. (2001) found out that when educating parents about school-based literacy practices, it is important that educators understand the beliefs and practices that parents bring to new learning situations that are shaped by their social and cultural environment. If not, educator’s attempts to support parents in children’s literacy development may not be effective.

Karande et al. (2007) observe that a supportive home environment is one of the factors that can favourably determine the outcome of specific learning disability (SpLD) in a school-going child. However, there is no reliable information available on parental knowledge about SpLD. The aim of their work is to investigate parental knowledge of SpLD and to evaluate the impact of an educational intervention on it. A questionnaire-based study was conducted in their clinic. 50 parents who were conversant in English and willing to follow up were interviewed. After the interview, each parent was administered a structured educational programme and re-interviewed after 3 months. After the intervention, there was significant improvement in parental knowledge on the meaning of the term 'SpLD' and they got an awareness on the fact that remedial education given by special educator is the recommended therapy for SpLD.

Long (2007) in the article ‘Special Section: Learning from Experience: Shifting from Clinical Parent Training to Broader Parent Education’ discusses the author's early experiences in the area of clinical parent training and his desire to impact a broader population of parents. He discusses how an evidence-based clinical parent training programme was used as the basis for developing both a self-guided programme and a parenting class curriculum tailored to serve parents of young children with less severe (non-clinical) oppositional behaviour. He also discusses the
development of a parenting education programme that targets a broader population of parents.

Lonigan et al. (1996) found that children’s increased knowledge of phonological sensitivity was related to parental involvement in literacy activities in the home. It has also been claimed that young children learn these skills (i.e., letters of the alphabet, phonemic awareness) by observing and participating in different print literacy activities that are an important part of their own communities.

Manju Pandey (2003) conducted a study titled ‘Effect of Ecological Factors on Learning Disability’. It was an attempt to cover the ecological variables related to learning disabled children such as parental education, family income, occupation, religion, birth order, age of mother at child’s birth, working mother and management of school. The study was undertaken in Srinagar Garhwal, a small town in Central Himalayas. 100 learning disabled and 100 learning abled male and female children constituted the sample. Result of the study demonstrates that environmental factors play a crucial role in the development of learning disability in children. This study indicates that parental education and occupation are most influential factors for learning disability in children. It is necessary to pay more attention for detecting factors as soon as possible so that the remedy can be given at a very early stage.

Sangwan et al. (2006) carried out a research in which 80 slow learners aged six years old (40 boys and 40 girls), I.Q. range 70-90 and 80 children who were average learners (40 boys and 40 girls), I.Q. range 90-110 were selected. Standford-Binet Intelligence Scale (1986) was used to asses I.Q and an interview schedule was prepared to study the associated factors. Frequency, percentage and correlation coefficients were used to draw the results. Results revealed that factors like size of family, type of family,
occupation, education and income of parents, indoor and outdoor facilities in
the school, and various activities and competitions organized in school were
found to influence the learning process of children who were slow and
average learners.

Scher et al. (1997) reviewed that reading habit in home and family
influences children's motivation for reading. Children whose early
encounters with literacy are enjoyable are more likely to develop a
predisposition to read frequently and broadly in subsequent years. Young
children's self-initiated interactions with print at home are important
behavioral indexes of emerging motivations for reading. Shared storybook
reading plays an important role in promoting reading motivations. When the
socio-emotional climate is positive, children are more interested in reading
and more likely to view it as enjoyable. The beliefs held by children's
parents about the purposes of reading and how children learn to read relate
to children's motivations for reading. Parents who believe that reading is a
source of entertainment have children with more positive views about
reading than do parents who emphasize the skill aspect of reading
development. These findings have important implications for offering
guidance to parents and for the development of family literacy intervention
programmes.

2.8 An Overview of the Research Reviewed

An overview of the research reviewed clearly shows that a good
number of researches have been conducted on learning difficulties/
disabilities in reading, writing, spelling and arithmetic and their relationship
with psycho-social variables such as self-concept, achievement motivation,
personal adjustment, social adjustment and home environment in the
Western countries and only a limited number of studies are reported in India.
The studies reported also revealed that there is a relationship between behaviour problem and reading disabilities (Mc Gee et al., 1988; Fergusson and Lynskey, 1997) and syntactical complexity is a critical factor in correct sentence repetition (Ramaa, 1984). Boys experience more reading disabilities than girls. Medium of instruction and parents’ income are influencing factors of reading difficulty (Kusuma Harinath, 2001). Age has a significant influence on disability in reading, language, writing and spelling (Srivatsava, Sushila, and Afiah, 1992). Visual and verbal impairment are considered as reason for reading disability (Doehring, 1968). 60% Reading disabled children exhibited a double deficit in phonological and rapid naming skills (Cirino et al., 2002). Reading disability was found in 20% of students in primary schools (Rao, 1986). Reading achievement was highly correlated to expressive phonological ability (Larrivee and Catts, 1999; Gillon, 2000; Shaywitz et al., 2002).

Students with dyslexia have problem in automatic letter writing and naming which is related to impaired inhibition (Berninger, 2008). Reading disability is the most prevalent type of learning disability and among the learning disabled 92% have disability in writing expression (Calhoun, 2007).

Assistive Technology is useful to overcome learning difficulties (Hall, 1991; Umadevi, 1997; Tahiliani, 1998; Reddy, G.L et al., 1999; Geetha, 2000; Huff et al., 2002; Evelyne, 2007). Remedial measures were found to be effective for remediating the spelling problems (Devi, 2004; Bishop et al., 2005; Darch et al., 2006; Wright and Mullan ,2006).

Children with dyscalculia demonstrated more behaviour problem than normal children (Auerbach, et al., 1995). 42% of children with dyscalculia had problem with attention (Badian, 1983). The remedial programmes such as modelling, prompting, guided practice, content based arithmetic skill training, error detection, co-operative learning, correction, working with
illustrations, instructional video programmes etc are effective in the improvement of arithmetic skills of learning disabled children (Kingma, 1984; Reddy and Ramar, 1998; Bhasi, 2000; Montague, 2002; Cass et al, 2003; Chauhan, 2004; Pooja, 2004).

Children with learning disabilities experience higher levels of trait anxiety and have higher prevalence of somatic complaints as well as poor self-concept (Bender and Huntington, 1993; Humphrey and Mullins, 2002; Brockelman et al., 2005; Iqbal, 2006). Attribution retraining methods combined with appropriate skill training help to overcome negative self-concept in learning disabled children (Chapman and Tunmer, 2003).

Low levels of achievement motivation is observed in learning disabled children (Chattopadhyay et al., 1996; Elbaun and Vaugh, 2003). Low socio-economic status correlates with poor academic achievement and low achievement motivation (Ginsburg and Bronstein, 1993; Maqsud and Coleman, 1993; Schultz, 1993).

Learning disabled children experience poor socio-personal and educational adjustment as compared to normal children (Bender and Golden, 1998; Gitanjali, 2004; Iqbal Naved and Gupta Preeti, 2006). Studies show that boys and girls differ in their personal adjustment. Girls have better personal adjustment than boys (Bharati, 1984; Hema, 1995).

There is a definite relationship between personal adjustment and academic achievement (Iyer, 1977; Shivappa, 1980; Nair, 1983). Children with learning disability are at risk of poor social competence (Broder et al., 1981; Cartledge et al., 1986; Cornwell and Bawden, 1992) and social difficulties (Malka Margalit and Michal Levin, 1994; Halle. W. James and Meadan Hedda, 2004).
Socio-cultural background of the family influences the children’s motivation for reading (Heath, 1983; Lonigan et al., 1996; Scher et al., 1997; Gregory, 2001; Howell et al., 2007). Factors like size of the family, type of the family and socio-economic status are significantly correlated with the children’s academic achievement (Sangwan, 2006).

Most of these studies are of developed Western countries where prior concern is given to the education of learning disabled children. Less number of studies have been done in underdeveloped countries because their education system has not been fully developed. India is a fast developing country and the Government offers equal opportunity of education to its people. A few studies on learning disabilities have been carried out in Indian universities. We know that learning difficulties in reading, writing, spelling and arithmetic at elementary school level in children may lead to disinterest towards higher education and if such difficulties are not properly rectified, the possibility of wastage and stagnation will arise.

Psycho-social variables such as achievement motivation, self-concept, personal adjustment, social adjustment and home environment are closely related to academic achievement. Studies show that appropriate programmes to foster achievement motivation, self-concept, personal adjustment and social adjustment of learning disabled children will help them to improve their academic achievement because these psycho-social variables are definitely related to academic achievement. There are no studies conducted in Kerala on the psycho-social variables of elementary school children with learning difficulties in relation to their academic achievement. The present investigation is an attempt to identify certain psycho-social factors related to the academic achievement of the learning disabled elementary school children of Kerala.

The statement of the problem is presented in the forthcoming chapter.