SPECIFIC LEARNING DIFFICULTIES: DIAGNOSIS AND IMPLICATIONS FOR SOCIAL PSYCHOLOGICAL FUNCTIONING

ERUM IRSHAD

DEPARTMENT OF PSYCHOLOGY
UNIVERSITY OF PESHAWAR
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IN THE NAME OF ALLAH

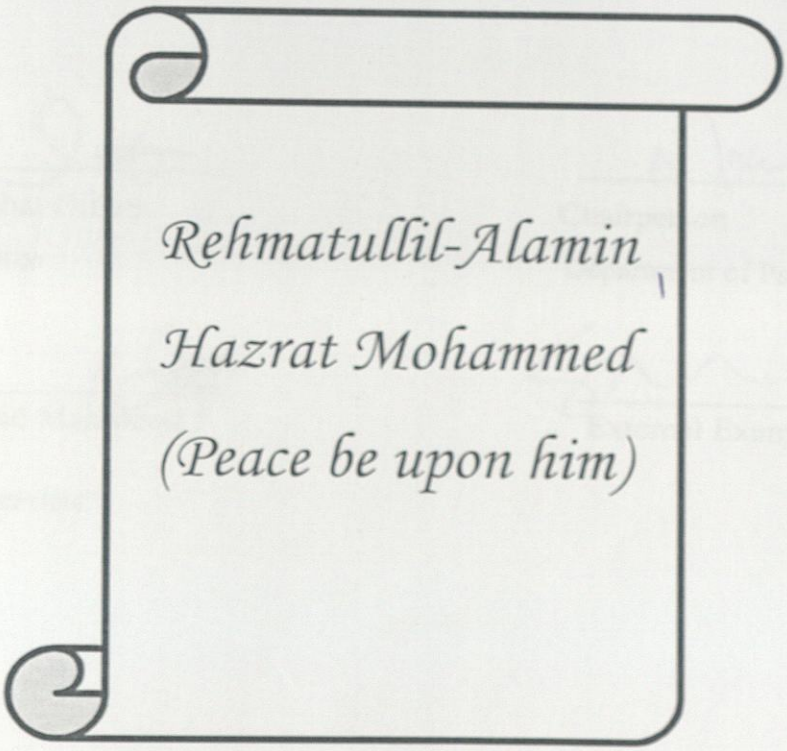
THE MARCIFUL, THE

BENEFICIENT

"Read in the name of thy Lord, Who created, he created man from a clot. Read and thy Lord is Most Honorable Who taught man when he knew not".

(AL- QURAN 96:1-5)

DEDICATED TO



APPROVAL CERTIFICATE

It is certified that this dissertation titled "Specific Learning Difficulties: diagnosis and implications for social psychological functioning'' submitted by Erum Irshad conform to acceptable standards, and as such in adequate in scope and quality. It is therefore approved as the fulfillment of the dissertation requirements for the degree of Doctor of Philosophy in Psychology

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ABSTRACT

The present research examined the prevalence of specific learning disabilities and its implication for social psychological functioning among girls. The research was carried out in two phases. The first phase comprised of development of a screening check list, development of the scale to measure learning disabilities and establishing its discriminant validity. The second phase comprised of assessing the I.Q level of learning disable and non disable girls and to investigate psychological comorbidity among the girls who have learning disabilities. Raven Colour Progressive Matrices and Human Figure Drawing test was used for the assessment of level of intelligence and to investigate psychological comorbidity. From an initial pool of item based on most reported symptoms of learning disabilities seventeen items were selected after meeting the criteria of inclusion. Overall the results of validity test provided good evidence of discriminant validity and confirmed the diagnostic value of newly devised scale. The sample of phase one comprised of four hundred girls students who were initially assessed on screening checklist to find out the presence of symptoms of specific learning disabilities. Those girls students who responded yes to twelve or more than twelve symptoms were selected for further assessment and rest of them were excluded as they were not showing symptoms of learning disabilities. Out of four hundred two hundred girls students who showed symptoms of specific learning disabilities were further assessed on learning disabilities scale. Seventy five girls students out of two hundred were diagnosed as suffering from specific learning disabilities. Similar assessment procedure was adopted with seventy five non disable girls

students. It was hypothesized that poor self image, anxiety, depression and aggression will be more prevalent among girls suffering from specific learning disabilities than those without specific learning disabilities. Results supported our hypotheses. It was found that girls suffering from specific leaning disabilities showed greater number of emotional indicators on Human Figure Drawing Test measuring poor self image, anxiety, aggression and depression as compared to non disable girls who showed lesser number of emotional indicators. Scores of learning disable and nondisable girls on Coloured Progrsessive Matrices showed no significant differences between the two groups. The relationship between specific learning disabilities and psychological comorbidity was evident and supported some of the previous findings.

Chapter I

INTRODUCTION

Gender and Disability: A Double Disadvantage

People with disabilities face many obstacles in their struggle for equality. Although men and women with disabilities are subject to discrimination because of their disabilities, women are at further disadvantage because of the combined discrimination based on gender and discrimination based on disability.

Disability studies have traditionally used a gender blind approach to examine the lives of people with disabilities and have neglected to explore the influence of gender in the lives of men and women with disabilities. The field of disability has not yet recognized the combined discrimination of gender and disability experienced by women who have disabilities, and policies and practices in the field have not yet been designed to meet the specific needs of women with disabilities (Kutza, 1999).

Women with disabilities are typically seen as help less, child like, dependent, needy, victimized, and passive. They therefore reinforce traditional stereotypes of women. Asch and Fine suggested that this may be one of the reasons why women with disabilities have been excluded from the women's movement (Asch & Fine, 1999).

The disability rights movement has also ignored issues of importance to women with disabilities and many feminist with disabilities have complained about its male domination and male orientation (Blackwell,

1993). The silence of women movement and disability movement about the issues related to women with disabilities have marginalized women with disabilities (Meekosha, 2000). It is argued that this marginalization has left women excluded from community life, powerless, poor, denied a real education or opportunity for political decision making, silenced and vulnerable to violence. The failure of feminist discourse to integrate the experience of women with disabilities marginalized and feminist analysis of social reality incomplete. Meekosha argues that gendered and disabled bodies must be central to feminist analysis because they offer a site for the study of major contradictions of the social, psychological and political nature (Meekosha, 2000).

There is an ample evidence that women with disabilities experiences major psychosocial problems that remain largely neglected including depression, stress, lowered self esteem, and social isolation (Nosek, 2005).

When it comes to education, women with disabilities are likely to report less education than both non-disabled women and men with disabilities. Women with disabilities are five times as likely as women without disabilities to have less than eight years of formal education; 17.4% of all women with disabilities have less than 8 years of formal education as compared to 3.5% of non disabled women. Only 16% of all women with disabilities are likely to have any college education compared to 31% of non-disabled women and 28% of men with disabilities (Bowe, 2001).

Most studies indicate that boys are more likely to be identified as needing special education than girls. While boys count for 51% of all students in elementary and secondary schools, they can count for up to 75%

of students in special education classes (Russo, 2000). Researchers have speculated why boys are more readily identified as needing special education. Some authors have suggested that this reflects discrimination against boys with disabilities and deprives them from the benefits of regular education. They suggested that the overrepresentation of boys in special education reflects the view that educating boys with disabilities is regarded as priority; they are seen as in need of special education services in order to develop the skills to be able to support themselves and a family later on (Disability Rights Education and Defense Fund, 2000).

Research also indicated that boys labeled as having mental retardation have higher IQs than girls with the same label. Gillespie and silver (2000) have suggested that the reason for this may be that stereotypes of a female and a person with mental retardation are similar. Both are seen as illogical, dependent, emotional, and needing protection. Girls may therefore not be labeled having mental retardation unless they have significantly low intelligence. Research clearly indicates that boys and girls with same disability often receive different kinds of education (Women and Disability Awareness Project, 2000). Higher education continues to be a challenge for women with disabilities. Like men with disabilities they face accessibility problems; unwillingness on behalf of educational institutions to provide accommodations for disabilities. In addition to the problems they share with their male counter parts, they face additional barriers. Like non-disabled women, women with disabilities are channeled into traditional female fields as compare to men with disabilities. As a result they are unlikely to have the educational opportunities that allow them to access to highly valued, well-

paying professional positions (Russo, 2000). This suggests that gender may play a significant role in how students are identified for educational services.

Girl Child in Pakistan

Women in Pakistan are disadvantaged from the moment they are born. The birth of a girl is frequently met with disappointment, even anger, and the blame is usually placed on the mother. As a rule, the girl child receives less food, less access to education and less health care. Investment in girls education and skill development is meager. Strict family and traditional Pakistani values dictates that women are considered property of male family members. Pakistani society essentially views women as being owned by her father or brothers before marriage, and her husband after marriage. Women are not allowed to offer their own opinions, as that is viewed as talking back. Women are taught to live in submission of man. As one women's organization put it;

"The girl is liability, at an early age the girl child is made aware that she is only temporary member of the family. Any skills she learns will benefit not her own family but her in laws" (Aurat foundation, 1999).

The status of women in Pakistani patriarchal society is based on two fundamental perceptions, that women are subordinate to men, and that a man's honour resides in the actions of the women of his family. To ensure that they do not dishonor their families, society limits women's mobility, places restrictions on their behaviour and activities (Adeel, 1997).

Girls are kept at home to do household chores or to look after younger children when required by the family or whenever funds are low. According

to Pakistan integrated house hold survey (2002) only 29 percent of females are literate, compared to 57 percent of males. School enrolment of girls is low, only 28 percent of girls of primary school age attend school, and only 11 percent of older girls go to school. The analysis reveals that drop out rates are not alarmingly high but have been increased steadily from 40 percent in 1996 to 54 percent in 2000. Drop out rates are generally high among girls increasing at higher pace relative to boys. Currently 51 percent of boys 59 percent of girls leave school before reaching grade five. In Pakistan the situation is even worse where women and disabilities are concerned. A focus on these would lead to a picture of doom and gloom. Because in Pakistan defining ones identity is far more complicated for women, and women dream is more complex because of traditional family/ career divide. Women have to face many barriers in achieving their goals and aspirations. For women with disabilities this task is far more difficult.

Services in the field of special education in Pakistan started in 1959 when govt commission on education recommended vocational programmes for physically handicapped so that they can enjoy a measure of economic independence.

In 1972 the Federal Ministry of Education framed a new education policy for framing the education system with emphasis on special education as a result different projects were started for physically handicapped, hearing impaired, mentally retarded and blind.

In 1985 national policy for special education drafted which was reviewed in 1988. They proposed fourty six special education centre in

Pakistan,11 for visual impaired, 11 for physically impaired, 12 for hearing impaired and 12 for mentally retarded.

In March 1986 a nation wide census was conducted under the directorate of special education Islamabad which showed 10% disabled population and distribution of disability showed that 21% were mentally retarded, 15% visually impaired, 9% hearing impaired, 33% physically disabled, 19 % multiple, 3% were not classified. These findings clearly suggest that there is lack of attention of the special education institutions at national level about the serious problem of specific learning disabilities as no statistics is available about the incidence and prevalence of specific learning disabilities.

A large number of children with special educational needs are in the ordinary schools of Pakistan because of non availability of special education institutions, though data indicating the incidence of such pupils in regular classrooms are hard to come by (Lari, 1992).

Recent reports indicate that Pakistani children face poor performance on social indicators, and their health status continues to be deficient. Poverty keeps millions of working children out of school, and there is high rate childhood disabilities. The problem faced by girls are more severe and restricting their access to health care, education, and recreation (UNICEF, 1993).

The situation is further exacerbated by the wide gender disparity in school enrollment between boys and girls which is 1-10 for ordinary schools and 1-40 for special education schools (Pakistan integrated house hold

survey, 2002). Women constitute more than 55 percent of the population of Pakistan and high rate of illiteracy among them creates an adverse impact on level of school enrollment and the quality of human capital. This if not addressed properly can contribute significantly to the increase of high illiteracy rate among girls. This major segment of society can be made functional by addressing issues related to their problems. Considering these facts, the present research was designed to look into the prevalence of specific learning disabilities among school going girls and to observe its implication for social psychological functioning. This will be done through looking into the prevalence of specific learning disabilities and to observe psychological comorbidity compared to non disabled girls of the same population. The next chapter will include in detail the nature, types, causes and researches conducted on learning disabilities.

Chapter II

Chapter-II

Specific Learning Disabilities

A disability is an impairment (permanent or temporary) that substantially limits one or more major life activities. Unlike other disabilities such as paralysis or blindness a specific learning disability is a hidden handicap. .A learning disability doesn't disfigure or leave visible signs that would invite others to be understanding or offer support.

Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations. The term includes such conditions as perceptual handicap, brain injury or minimal brain dysfunction, dyslexia and developmental aphasia. The term does not include children who have problems that are primarily the result of visual, hearing, motor disabilities, mental retardation, emotional disturbance, or of environmental, cultural, or economic disadvantage (Individual With Disability act-IDEA, 1990).

The learning disability association of America states that, specific learning disability is a chronic condition of presumed neurological origin which selectively interferes with the development, integration, and nonverbal abilities. Specific learning disabilities exist as distinct handicapping conditions that vary in manifestations and in degree of severity. Throughout life, the condition can affect self-esteem, education, vocation, socialization and daily living (LDA, 1986).

The National Joint Committee on Learning Disabilities states that, "Learning disability is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening seeking, reading, writing, reasoning or mathematical abilities " (NJCL, 1987).

Prevalence

The National Institute of Mental Health in its report freedom to learn states that basic skills for learners with learning difficulties and disabilities affects 10% of the general adult population and 4% severely (NIMH, 2000).

According to the United States Department of Education (2002), more than one in six children will experience difficulty to read during the first three years of school. More than 2.8 millions children receiving special education services out of them 52 percent identified as having learning disabilities. The rate of occurrence of learning disabilities in girls is similar to boys. National centre for learning disabilities (2002) conducted an epidemiological study and found that as many girls as boys have difficulties in learning.

Learning disabilities manifest itself in different forms like difficulty in writing, reading, spelling and mathematical calculations. It also results in problem in memorization, attention and following directions. On the basis of the nature of difficulties learning disorders has been classified into different types in Diagnostic and Statistical Manual of Mental Disorders (DSM IV) which are following.

i. Reading Disorder

ii. Mathematics Disorder

iii. Disorder of Written Expression

iv. Learning Disorder not otherwise specified

Reading Disorder

In reading disorder the reading achievement is usually below the individual age, intelligence and education which interfere with academic achievement and activities of daily living that require skills. Oral reading is characterized by distortions, substitutions, omissions, slowness and errors in comprehension.

Mathematics Disorder

This disorder is characterized by below average performance on standardized test of mathematical calculation and reasoning. The disturbance in mathematics significantly interferes with academic achievement and activities of daily living that require mathematical skills.

Disorder of Written Expression

The essential feature of disorder of written expression is writing skills that fall below age, intelligence, and education. The disturbance in written expression significantly interferes with academic activities and activities of daily living that requires writing skills. There are difficulties in the individual ability to compose written text evidenced by grammatical or punctuation errors within sentences, poor paragraph organization, multiple spelling errors and excessively poor handwriting.

Learning Disorders Not Otherwise Specified

This category is for disorder in learning that does not meet criteria for any specific learning disorder. This category might include problems in all three areas (reading, mathematics, written expression) that significantly interfere with academic achievement and daily living.

Characteristics of Learning Disable Children

Learning disable children exhibit certain characteristic that distinguishes them from children who do not have problems of learning. These characteristics are;

Attention Problems

Learning disable children have short attention span due to which their concentration is poor and get easily distracted (Reddy, 2003).

Impulsivity

Such children do not stop to think before they act. They answer the teacher question before he or she finishes asking. They get angry easily and do not learn from their experiences because they can not pause before any act. Due to this sort of character they cannot complete their work nor can they make friends easily (Andrew, 1995).

Perceptual Problems

Information enters the brain through all the senses, brain processes this incoming information. A learning disabled child lacks processing skills

or naming sensation, they have poor visual or learning perception. They may see 'was' as 'saw', dog as 'bog'. In matters that require eye hand coordination, learning disabled finds it very difficult to work out. He may have trouble in organizing their position in space, might confuse left and right, skip words and letters when reading, some have difficulty in distinguishing different sounds, words or understand concept in a conversation, some have auditory lag, they seem to miss part of what they hear. Difficulty with auditory figure ground is another problem, a child may hear activity in the class but cannot realize the actual source unless we ask or pinpoint him. Auditory perception provides an important pathway to learning, a person having difficulty in perceptual process, will have difficulty in auditory, linguistic and phonological process also (Reddy, 2000).

Cognitive and Metacognitive Problems

A learning disable child has trouble with accessing and coordinating a number of cognitive activities. They experience difficulty with self regulating mechanism such as checking, planning, monitoring, testing, revising and evaluating during an attempt to learn or solve problem. They also perform poorly in such activities that require general control over information processing (Paul, 1980).

Long Term Memory

Learning disable child select less efficient strategies, conduct a less exhaustive search for retrieval cues, and lack self checking skills in the selection of retrieval cues (Wadswarth, 1992).

Visual Discrimination

It involves the ability to differentiate one object from other. The skill of matching objects or letters, differences between letters such as t, i ,m, n, p, q. Discrimination of colour need visual discrimination ability, learning disabled child lack this skill which puzzle them in doing daily school work (Stein, 1985).

External Locus of Control

Learning disable children have an external rather than internal locus of control for their actions. They depend on other persons, stimuli or events for their actions. This tendency effects their self esteem and decision making abilities (Crealock, 1995).

Lack of Motivation

Learning disabled children doubt their intellectual abilities and they come to believe that their efforts to achieve are fruitless, that is the result of their continuous failure in school subjects or in dealing with problem situation. These feelings lead to withdrawal or lack of motivation (Crealock, 1995).

Lack of Phonological Awareness

Children with learning disabilities show lack of phonological awareness, since they are not sensitive to phoneme sounds of language and words. They are poor readers and spellers, they cannot differentiate between closely similar sounds as bat, hat, and they can not spell a word or make a word after hearing its sound (Lovit, 1978)

Slowness in Naming

A learning disable child shows slowness in finding suitable word to express his thoughts. They are slow in expressive language. They cannot explain a picture or incidence and give information (Smith, 1982).

Pronunciation Problem

Learning disable child can not pronounce different sounds of alphabets. They lack fluency, some have delayed language or they may not talk at all. Some use inappropriate words or add unnecessary sounds in between (Bakwin, 1973).

Difficulty with Concepts of Time And Space

Many children have poorly developed conception of space. They have only a dim notion of where one place is in relation to another. Even in their neighborhood, they cannot find their way home by an alternate route. They have no spatial maps in their heads and fail to understand how two dimensional maps represent the world (Bawden, 1992).

Poor Ability to Combine Movement and Vision

Many children with learning problems are unable to guide their eyes, cannot judge distance or direction by vision alone. They can run or swim well but have trouble with sports in which the movements be skillfully integrated with rapid visual response activities such as catching or batting a ball through the hoop (Bawden, 1992).

Poor Listening Ability

Some children hear speech sounds imprecisely so that they confuse words that sound alike. They miss much of what is said to them because they are unable to process it fast enough (Harwell, 1995).

Poor Sensory Integration

Some children appear to be able to handle tasks that are purely auditory. But they seem to have difficulty in combining information that comes through separate sense organs (Harwell, 1995).

HISTORICAL PERSPECTIVE

The study of learning disabilities was initiated in response to the need to understand individual differences among children and adults who displayed specific deficits in spoken or written language in order to provide services to these students, who were not being adequately served by the general educational system. Overall the field of learning disabilities emerged primarily from a social and educational need and currently remains a diagnostic practice that is more rooted in clinical practice. The detailed chronological developments in the field of learning disability is as follows:

The history of learning disabilities can be traced back to 1877 when German physician, Adolf kussmual noticed that following a stroke the brain could function well in many areas like the power of sight, intellect and power of speech but a complete text-blindness may exist. He coined the term word blindness to describe those stroke patients who had lost the ability to recognize written words (as cited in Crisfield, 1996).

Dr.James Hinselwood, (1885) an ophthalmologist and assistant surgeon, described in an article "word blindness and visual memory" the case of a patient who was a teacher of French and German, he one morning discovered that he could not read and exercise book given to him by a pupil to be marked. He could still read any number of figure quite fluently and with out any mistakes. Hinselwood concluded that his inability to read was thus manifestly not due to any failure of visual power but to the loss of visual memory for letters. Today his condition would be described as acquired dyslexia (as cited in Philomena, 1997).

In 1896 Pringle Morgan described fourteen year old Percy as a bright intelligent boy, quick at games and in no way inferior to others of his age, but who spelt his own name wrongly. Words written or printed seem to convey no impression to his mind and he was quite unable to spell the name of his father house, though he must have seen it and spelt it many times (as cited in, Martin 1997).

In 1895 James Karr, the medical officer of health for Bradford, reported on cases of children who could not learn to read, He described them as having 'congenital word blindness.' Then in 19th century Samuel Torrey Orton started work with children who had learning difficulties. In 1925 he examined 125 school children and found that fifteen appeared to be retarded in reading and show certain similarities in the errors that they made. He was impressed with a specific characteristic of reading impairment in the children he studied i.e. instability in recognition, recall of the orientation of letters and the order of letters in words which he termed"strephosymbolia"meaning "twisted symbol. He died in 1948 to ensure that his work continued, a group

of his associates formed the Orton society in 1949. It later change its name to the Orton dyslexia society. The society organizes annual conferences and produces a professional journal of dyslexia in the USA and the rest of the world (as cited in Martin, 1997).

In the 1930s Orton asked his research assistant who was an educational psychologist named Anna Gillangham, to devise a method for teaching and remedying of the problems he had identified in the children he had examined. Later Gillingham collaborated with an experienced teacher named Bessie Stillman, who was dyslexic herself to devise a programme to overcome the word –blind child problem. They began work in 1946 and published their programme privately, called remedial training for children with specific language disability in reading and spelling. The book published in 1956 became classic teaching text world wide and was revised many times. The multisensory teaching technique outlined in their programme were linked to underlying weakness and difficulties experienced by the pupils whom Orton had identified. This programme known as Gillingham-stillman manual became a bible for those working in the field. In the decade of 1940s and 1950s in UK some doctors such as Critchley, White franklin and Strauss were seeing children with reading difficulties. These children were referred to Masisie Holt, a Psychologist at St Bartholomoew hospital in London. She taught the children and incorporated Gillingham-Stillman methods into her work and become popular for dyslexic clinic at Barts (as cited in Paul, 1980).

The Invalid Children Aid Association (ICAA, 1962) held an international conference in London 350 delegates attended and established

that there were people who had undue difficulty in learning to read. As a result of this conference in 1964 the word blind centre for dyslexic children was established as research project by ICCA in London. One of its many functions was to carry out research into the nature and causes of specific developmental dyslexia. It did outstanding work both in the field of research and teaching, organizing conferences, teaching and assessment of dyslexic children that lead to exchange of ideas between medical and educational world. It was closed in 1972 because of lack of funding (as cited in Martin, 1997).

In 1966 the Bart association for the study of dyslexia was founded by Marion Welchaman. In 1967 this association conducted two week teacher training courses in which different experts contributed (as cited in Philomena, 1997).

In 1970s the major focus was on training of teachers who were working with learning disable individuals. The British council for the rehabilitation of disabled set up a center to teach adults. The chronically sick and disabled person act was passed and the word' acute dyslexia' was first mentioned in the House of Commons. In 1971 Helen Arkell Dyslexia centre opened in London to teach children and train teachers. In 1972 members of eight local dyslexia associations founded the British Dyslexia Association (BDA). In 1973 the British dyslexia association had its first official meeting with department of education and science (as cited in Philomena, 1997).

In 1974 the Cambridge conference was chaired by Professor Oliver Zangwill and he and Beryl Wattles founded the Cambridge specific learning disabilities group. In 1975 Lord Radnor and Lord Renwick spoke about

dyslexia in their maiden speeches in the House of Lords. In 1976 the Aston Index by Margret Newton and Micheal Thomson was published. In 1977 Kathleen Hickeys programmed a language training course for teachers and learners. In 1981 Violet Brand founded the Watford dyslexia unit. It ran teacher-training courses and taught dyslexic children and adults. In 1983 the education act was passed. It recognized that some children have special education needs. In 1985 the dyslexia education trust funded teacher training courses (as cited in Martin, 1997).

In 1990 an awareness campaign was launched by BDA, which resulted in 29,000 telephone calls on the help lines set up throughout the UK. The year 1994, was designated as year of young dyslexic adult. It aimed to increase the awareness of their needs and the support that they require after leaving school (as cited in White, 1999).

Warne (1999) conducted research on clinical features and causes of reading and spelling disorders. Neuroanatomical, neurophysiological and neuropsychological correlates have been studied by means of autopsy, brain imaging, neurophysiologic and neuropsychological methods. According to him there is good evidence that dyslexia is determined by heritable cognitive components of reading and spelling processing.

Hurwitz (1999) investigated cognitive and neurobiological influences in reading and in dyslexia. They found that dyslexic readers demonstrate a functional disruption in an extensive system in posterior cortex encompassing both traditional visual and language regions and a portion of association cortex.

Sukhanho et al. (1999) investigated naming speed deficits in Chinese dyslexic children with twenty average readers of the same age and twenty average readers of the same reading level in naming speed and phonological memory skills. The results showed that naming speed of Chinese dyslexic was significantly slower than of their controls. The dyslexic children also performed significantly worse on phonological memory tasks.

Halland et al. (2000) conducted study on executive functions in dyslexia. Subjects were tested with a Dichotic Listening Test, the Strop Color Word Test and the Wisconsin Card-Sorting Test. The dyslexic's subject demonstrated significant impairment in all tasks. The data supported hypothesis suggesting executive problems in dyslexia, depending on receptive language skills.

Weber (2000) investigated diminished motor timing control in children referred for diagnosis of learning problems. They found that learning impaired group performed more poorly than non-learning impaired group. Poor motor timing control is associated with poor reading but may also be a characteristic of children referred for learning problems, possibly signaling increased vulnerability of underlying neural integrative process relevant to the Childs adaptation to academic demands, including reading.

Wilson et al. (2001) investigated persistence of phonological processing deficits in college students with dyslexia who have age appropriate reading skills. Findings suggested that there is difference in the phonological processing skills of dyslexics as compared with a group matched on age and education. These findings supported the casual role of phonological awareness in the acquisition of reading skills.

Paulse et al. (2001) carried out research to observe dyslexia, cultural diversity and biological unity. They concluded that there is universal neurocognitive basis for dyslexia because positron emission tomography scans during explicit reading showed the same reduced activity in a region of left hemisphere in dyslexics from all three countries. With the maximum peak in the middle temporal gyros and additional peaks in the inferior and superior temporal gyrus and middle occipital gurus. They found that differences in reading performance among dyslexics of different countries are due to different orthographic involve in different languages.

Helmuth and Laura (2001) conducted study on dyslexia, role of brain and different languages. They observed brain activity in British, French, and Italian adults while they read. All dyslexic showed less neural activity in a part of the brain vital for reading. They concluded that differences in prevalence of clinical manifestations among different countries must be attributed to other factors.

Sprinkles et al. (2002) studied perceptual discrimination of speech sounds in developmental dyslexia. The discrimination responses of children who have dyslexia and those of average readers to sign wave analogues of speech sounds were compared. Results showed that children with dyslexia are less categorical than average readers in the speech condition, mainly because they are better at discriminating acoustic differences between stimuli belonging to the same category. In the non speech condition discrimination was also better for children with dyslexia, but differences in categorical perception were less clear.

Vonkprotyi and Catty (2001) studied visual-spatial strength in dyslexia which included rapid discrimination of computerized figures. Individuals with dyslexia were compared to controls on two computer based visual- spatial tasks in two studies. On the global tasks the dyslexia group was faster but no more than the control group.

Gangley et al (2002) evaluated sound symbol learning in children with dyslexia. Pretests of phonological and visual memory, a sound -symbol training procedure, phonological and visual memory were taken. After that posttests were taken to children with dyslexia, to children whose dyslexia had been compensated through remedial training, and to matched comparison groups. Children with dyslexia and children whose dyslexia had been compensated showed significantly less facilitation of phonological memory following the training than did typical readers, skilled readers showed some reduction in accuracy of visual memory following the training, which may be the result of interference of verbalization with a predominantly visual task.

Sofie et al. (2002) studied comparison of multiple methods for the identification of children with disabilities. They examined three different methods that could be used in the identification of children with reading disabilities. Standardized norm-referenced measures of achievement, phonological processing measures and curriculum-based measure of reading fluency were used with 40 children in grade one and two. Comparisons were made to determine which measure differentiated between children referred for reading disabilities and children who were progressing typically in reading in their general education class room settings. The results indicated

significant between group differences on standard norm referenced measure of reading recognition, word attack and comprehension, phonological measures of blending word and reading fluency. Teacher ratings on the dyslexia-screening instrument were consistent with teacher's belief regarding children's progress in reading.

Now in the 21st century learning disabilities become a separate discipline and different institutes are offering specialized training course in the field, working for the treatment of suffering individuals and involve in conducting researches on emerging issues. With the continues development and professional help parents are now hopeful about the future of learning disabled child.

Causes of Specific Learning Difficulties

Experts do not agree on the exact causes of learning disabilities, but learning disabilities have been associated with central nervous system dysfunction since 1898. In the past two decades researchers provided important information regarding possible relationship among many possible factors and learning disabilities, but still there is no one cause that can be held responsible for this disability. Different factors related to learning disability are discussed below.

Physiological Model

Researchers working within this model have found that a brain dysfunction can alter specific brain process, which in turn may affect particular aspects of an individual behavior. Gershwind and levitsky (1968) performed postmortem analyses on 100 adult human brains, they reported

that 68 percent had larger plenum temporal in the left hemisphere; and left hemisphere sub serves linguistic function in humans, the left plenum temporal, the right frontal regions, and the left posterior regions are larger in majority of the normal human brains. Any asymmetry in brain parts can lead to learning problems.

Genetic Factors

One of the first studies in genetics was conducted by Hallgren (1950). He believed that dyslexia was determined by an alternative form of gene, placed on a chromosome other than a sex chromosome. He drew the conclusion that the data he had obtained best fitted an autonomic dominant genetic mechanism.

Sladen (1971) criticized Hallgren because he in his view made no attempt to distinguish between specific and general retardation and used language and speech delays as evidence of reading problems. It was also found that Hallgren used reports of the children difficulties rather than an actual assessment of their performance. The concept of a non-sex-linked difficulty has also been challenged, because it appeared that a greater number of males than females were affected. It was suggested that the gene could be dominant in males, although recessive in females.

Later studies looked in more detail at the familial incidence of dyslexia. Owen et al. (1971) found reading difficulties in children to be particularly associated with fathers. It was also found that there were neurological immaturities present in both siblings. Similar results to these were found in the colarado family reading study (as cited in Decker, 1982).

When whole families of probands were compared with those of control families. The great difference between families was found to be of their reading abilities, with all members of probands families performing significantly more poorly than those of the control families.

Waddingtons (1985) presented theory of canalization according to which the developing phenotype can be represented by a ball that rolls through valleys of varying width and depths. At some points, a deflection can send the phenotype into different channels of development whereas at other points a major deflection is required to change the course because the genetic canalization is very strong. In relation to dyslexia this means that the impact of genetics can be stronger for different aspects of the disorder.

Linkage Studies

Linkage studies worked on the possible link between genes and learning disability, Smith et al. (1982) worked on families in which he found presence of specific reading disability and chromosome 15. He studied the effects of genetics by examining the reading patterns of twins for this purpose he examined both monozygotic and dizygotic twins and concluded that reading disability appear to be inherited through several generations in twins. Further twin studies focused on differences between monozygotic and diazygotic twins.

Brumback (1983) collected the largest quantity of data about twins and reading disabilities. He identified 338 twins pairs, of whom 97 children displayed difficulties with reading. Pair wise concordance rate was found to be 83 percent for monozygotic twins and 52 percent for diazygotic pairs.

Stevenson et al. (1987) found that when I.Q was controlled, for spelling heritability was 73 percent. However, concordance rate for reading backwardness and specific reading retardation was found only for spelling difficulties.

The Colorado twin study was one of the more noteworthy studies conducted on twins with regard to reading problems. The results of this study suggested that, proband wise concordance rates were 70 percent for monozygotic pairs and 48 percent for diazgotic pair (as cited in Defries, 1991).

Olson et al. (1966) found that link between word recognition and phonological coding was significantly greater than orthographic coding (as cited in Defries, & Wadsworth, 1990). Grigorenko et al. (1997) also found linkage for a different phenotype that of deficit in word recognition, with a marker on chromosome 15. Fisher et al. (1999) found that deficit in phonological and orthographic coding were related to the same region of chromosome 6 (Fisher, 1999).

Cerebral Dominance and Dyslexia

Orton (1937) proposed that words and letters were stored as the mirror image of what was seen in the opposite hemisphere, e.g. the word 'saw' was stored as 'saw' in the left hemisphere. This resulted in reversal and mirror imaging and the other features he observed in many people with dyslexia.

Newton (1970) proposed a lack of dominance in people with dyslexia. Her early work involved the examination of electroencephalograph (EEG). Using resting records, it was found that the alpha rhythm from the angular

gyrus region in particular, was symmetrical in children with dyslexia, i.e. an equal amount of alpha rhythm from both hemispheres. Where as in control children with dyslexia there was much more alpha rhythm activity in the left hemisphere (Fisher, 1999).

Shaywitz and Smith (1998) found that the route that information appears to take when reading is from the primary visual cortex to the visuals association areas, where words and letters are linked to language, and then to the temporal gyrus. Where sounds of language are translated into words or some form of semantic access. This was the normal route. However, in people with dyslexia, the final path was to Broca's area, where speech is processed, rather than to Wernicke's area, this suggest that there may be a problem with lexical access, i.e. finding names of words.

Paulesu et al. (1996) gave people with dyslexia rhyming and verbal short term memory tasks, there appeared to be a weak activation of the pathways that carry information from Broca's area to the superior temporal area. This also suggests a problem with translating unsegmented into segmented speech.

Stein and Fowler (1995) suggested that people with dyslexia had binocular instability, which resulted in difficulties in fixation, particularly in finding the relationship between tracking a text and fixing a target.

Errors in Fetal Brain Development

Throughout pregnancy, the fetal brain develops from a few cells into a complex organ made of billions of specialized, interconnected nerve cells called neurons. During the process of development the brain is vulnerable to disruptions. If the disruption occurs early, the fetus may die or the infant may be born with widespread disabilities and possibly mental retardation. If the disruption occurs later, when the cells are becoming specialized and moving into place, it may leave errors in the cells makeup, location or connections (Andrew, 1995).

Hereditary Factors

The fact that learning disabilities tend to run in families indicates that there may be a genetic link. For example, children who lack some of the skills needed for reading, such as hearing the separate sounds of words, are likely to have a parent with related problem (Decker, 1982).

Tobacco, Alcohol and Other Drug Use

Many drugs taken by the mother pass directly to the fetus. Research shows that a mother's use of cigarettes, alcohol or other drugs during pregnancy may have damaging effects on the unborn child.

Alcohol also may be dangerous to the fetus developing brain. It appears that alcohol may distort the developing neurons. Heavy alcohol use during pregnancy has been linked to fetal alcohol syndrome, a condition that may lead to low birth weight, intellectual impairment, hyperactivity and certain physical defects.

Drugs such as cocaine, especially in its smokable form known as crack seem to affect the normal development of brain receptors. These brain cells parts help to transmit incoming signals from our skin, eyes and ears, it also help regulate our physical response to environment. Because children with certain learning disabilities have difficulty understanding speech sounds or letters, some researchers believe that learning disabilities may be related to faulty receptors (Duane, 1996).

Problem during Pregnancy and Delivery

In some cases, the mother's immune system reacts to ferns and attacks it. This type of disruption seems to cause newly formed brain cells to settle in the wrong part of the brain or during delivery, the umbilical cord may become twisted and temporarily cut off oxygen to that fetus. This too can impair brain functions and lead to learning disabilities (Levy, 1996).

Biochemical Factors

Both excess and insufficient thyroid hormone may create physical states that reduce learning efficiency. Hyperactivity is created by excess of thyroid hormone. In contrast, thyroid deficiencies create a listless, placid individual who may not be motivated or activated to learn. Children who have thyroid deficiencies at birth are likely to be sevcrely brain damaged with impaired intelligence, receptive and expressive communications and body movements (Duane, 1996).

Improper metabolism of calcium can cause permanent intellectual deficits; high level of calcium can cause more problems than low level. Imbalance of glucose caused by improper function of insulin production in

pancreas. This condition produces tiredness lethargic mood, confused personality and attention problems. If the condition goes untreated the brain cells and support cells deteriorate and can cause irreversible damage to brain cells resulting in learning disabilities and mental retardation (Cordoni, 1990).

Environmental Factors

There are many environmental factors that can directly or indirectly cause severe learning problems. Lovit (1978) in his studies emphasizes three types of environmental factors. These are poor instructions, lack of motivation and curricula. Although they are not the direct resulting factors but can increase problems of learning disabled child.

Some environmental factors related to learning disabilities are tobacco, alcohol, drugs, and toxins. Poor economic conditions related to food, health, teenage pregnancy, food coloring, lead poisoning and so on. Many of these factors effect indirectly through mother's condition or home condition and directly such as nutritional deficiencies affect through maturation of the brain and central nervous system. It interferes with brain cell production, reduces brain weight and has lasting effects on learning and behavior. If these conditions are found in first six months of the pregnancy, they can cause severe damage to brain working system. Epreenough (1997) reported that rats reared in enriched environment showed more extensive dendrite fields for electric conduction in several brain regions.

From the above mentioned facts it appears that there are different causes of learning disabilities like central nervous system dysfunction, abnormal genes, use of alcohol and tobacco during pregnancy and

environmental factors. Professionals are now more persuaded that neurological dysfunction is viable casual factor in many cases of learning disabilities. Progress in identifying neurological factors underlying disabilities indicate that brain dysfunction is the main cause of learning disabilities which results in lack of sensitivity to external and internal stimuli. So the remedial approaches are mainly based on activating brain and its different functions, with the help of these strategies performance of learning disabled child can be improved. Some of these approaches are as follow:

1. Cognitive Processing Approaches

It refers to the mental processing involved in thinking and learning. Through this process training approached underlying process such as memory, perception can be improved.

2. Child Development Approach

In this approach emphasis is laid on developmental stages of the child. Unless one stage is completed a child can not move to the second stage of development. We can't push a child to learn tasks for which he/she is not prepared.

3. Learning Strategies Approach

Normally a person knows he or she can learn something, but the problem with learning disabled child is that he/she doesn't know about his/her own strategies of problem solving. These children need instruction in learning strategies they should be taught how to direct and control their own learning process.

4. Mastery Learning Approach

This perspective presumes that the student must learn sequence of skills. In order to learn, task mastery in one skill will lead to another skill.

5. Special Technique Approach

Learning disabilities is a heterogeneous group of disorder, each child is unique in his problem, so a particular or highly specialized technique is used for each child such as modeling, self monitoring, self questioning etc.

6. Material Approach

In this approach, the materials guide and direct the teaching. This material give step by step procedures, select the skill to be taught. Provide practice activities and give questions to be asked from the learning disabled child.

7. Psychotherapeutic Approach

This approach concentrates on student's feelings and relationship with teacher. Through this approach a healthy feeling of success is developed through small steps of skills, feelings of success establish positive environment for learning.

8. Pedagogical Approach

Good learning also depends on good teaching, poor teaching causes failure.

There are some common factors which can directly effect achievement and learning of student. Through these methods we can bring changes in learning situations and pupil's achievement level.

Disability can lead to secondary problems such as inattentiveness, low motivation, restlessness and disruptive behaviors which can cause emotional stress in disabled children, parents and teachers. This emotional stress can further make a child vulnerable to different psychological disorders. The next chapter will focus on emotional problems and comorbidity associated with learning disabilities.

Chapter III

Comorbidity of Specific Learning Disabilities

Psychological comorbidity refers to those factors which develop secondarily to a disability that adversely effect social and emotional life of the individuals who have such disability. These factors manifest itself in the form of anxiety, depression, aggression, poor self esteem and low motivation.

Silver (1997) says that learning disabilities are total life disabilities, as it interacts with all facets of the child life affecting cognitive, educational, social and emotional development. Berninger and Abbot (1997) found those children with problems of written language often exhibit deficit in attention, motivation and conduct problems. Research has demonstrated that students with learning disabilities experience emotional distress and tend to have higher level of emotional concern such as depression, loneliness and low self esteem than peers without disabilities. Bruck (1998) in her review of the literature related to social and emotional adjustment concluded that children with learning disabilities are more likely to exhibit increased level of anxiety, withdrawal, depression, and frustration compared with non disable peers. In a broad sense it appears that learning disability, no matter what the specific type is, has a tendency to co-occur with social and psychological problems which are discussed below.

Low Academic Self Concept

Sabornie (1994) found that students with learning disabilities have poor self concept related to their school functioning, but not necessarily to their global concept. Other researchers have also found that students with learning disabilities as early as in grade 3, have negative academic self concept that may be generalized from low self-views in specific academic subjects (Hiebrert et al, 1997).

Sabornie (1994) in his study of middle school student with and without learning disabilities found that students with learning disabilities expressed more loneliness, felt less integrated in the schools, and were victimized e.g. physically assaulted, had their possessions removed more often than were other students. These findings suggest that emotional effects of learning disabilities make life in school more difficult for children with learning disabilities as compared to their peers without disabilities.

Brook (2000) examined self esteem of children with disabilities. He found that these children are concerned about making mistakes and looking foolish, experience more failure situations than their peers and have low self esteem.

Anxiety

Learning disabilities have also been linked to greater anxiety in children. Margalit and Zak (1984) found that children with learning disabilities have higher levels of anxiety than their peers without disabilities. They tend to feel that things are beyond their control most of the time. Increased level of

anxiety is also reflected in more frequent somatic complaints by students with learning disabilities (Margalit & Zak, 1984).

Depression

Researchers have consistently linked depression to children with learning disabilities. Fristad et al. (1972) found the presence of learning disabilities among a sample of clinically depressed hospitalized children to be seven times higher than in the general population. Other researchers have also noted the high "comorbidity" of learning disabilities and depression. Fristed et al suggested that additional difficulties experienced by depressed children with learning disabilities in the class room may be due to the stress and frustration caused by their learning disabilities (Fristed, 1995).

Failure Syndrome

Learning disability can result in failure syndrome in which the child describes himself as "dumb" does not take reprimands well, may act out as the class clown to avoid detection, seems immature, avoids participation and does not complete assigned work. This syndrome can have more serious implications in which the child may have very explosive, unpredictable, even bizarre, or dangerous class room outbursts, appears withdrawn, fearful, and anxious, gets lost in fantasy, and may become preoccupied with sadness and thoughts of death or destruction (Harwell, 1995).

Ineffective Social Behaviour

Student with learning disabilities often demonstrate more problems in social competence than do their peers without disabilities. Sabornie (1994) found that general education teachers consistently rated the social behavior of

students without disabilities as higher than that of students with learning disabilities. Similarly Heibert et al. (1997) reported that teacher rated students with learning disabilities as behaving in less socially acceptable way than peers. Shlomo et al. (1998) investigated the extent to which interpersonal understanding mediates the relation between learning disabilities and social adaptation in class room. Twenty two children with and without learning disability completed a semi structured developmental clinical interview measure of interpersonal understanding. They were also rated by their fourth and fifth grade teachers on measures of social adaptation in classroom. Interpersonal understanding and social adaptation in the classroom were found to be positively correlated. Children with learning disability exhibited less interpersonal understanding and social adaptation.

Trouble At School

External factors may raise levels of emotional distress to such a degree that a child's ability to deal with school is compromised, indeed a child's life situation or surroundings may be so unstable or chaotic that they disrupt the child ability to learn. Hall and Haw (2001) concluded that due to emotional distress the child academic performance would decline.

Attention Deficit Hyperactivity Disorder (ADHD)

The most commonly identified co-occurring syndrome with learning disabilities is Attention Deficit Hyperactivity Disorder which is characterized by persistent and developmentally inappropriate level of inattention, impulsivity, and hyperactivity. Szatmari (1992) found high prevalence of ADHD ranged from two percent to six percent in children with learning

disabilities. Fletcher and Shaywitz (1996) concluded that whether children are identified in a school or in a clinical setting, thirty to fifty percent of children identified with a formally diagnosed learning disability meet diagnostic criteria for ADHD.

Somatic Ailments Or Complaints

Margalit and Raviv (1984) studied the expression of minor somatic complaints in learning disabled children. They assert that minor somatic complaints, such as stomach aches, feelings of stress and inadequacy are designed to prompt adult support and guidance. Students who frequently complain of minor physical discomfort but do not have physical illness may be using the somatic complaints to avoid situations they may be manifesting unrealized anxiety in physical manner.

Acting Out

Abrams (1986) believes that failure experienced by students with learning disabilities may result in excessive anger, which can be turned on others or back onto the child. For example the child may feel she is "stupid" and may turn her hatred onto herself, continually misbehaving and provoking reproach. In addition failure may serve as defense, failing in order to rid oneself of the anticipation of failure. They may act out in class, get into fight with other children, display defiance toward teachers and exhibit other disruptive behaviors.

Escaping School

A child may escape into fantasy to avoid the painful experience of failure. This not only result in failing to learn new skills, but reinforces the

child sense that the disability is too great to handle. Furthermore, if child efforts are unsuccessful, but he/she sees peers receive praise for their work, it is highly likely that the child will become unresponsive to school related events and may abandon effort (Hall & Haws, 2001).

Conduct Disorder

Many children suffering from learning disability will progress to conduct disorder (Andreson, 1991). Hinshaw in 1992 conducted extensive research on association between academic underachievement and anti-social behavior and found positive correlation between learning disability and conduct disorder.

Researches on Comorbidity Of Specific Learning Disabilities

Shirley (1999) examined the response of boys and girls with or without learning disabilities to social failure. Children participated in two dyadic interactions with experimental confederate: an unfriendly interaction and friendly one. The children's behavior was videotaped. It was noted that children with learning disabilities were felt significantly worse following unfriendly interaction. No evidence was found to suggest gender differences.

Vandaal, Victor, Riesman and Pieter (1999) investigated the effects of a Dutch intervention programmed for dyslexia. Two groups of participants were included, a group of children with pure dyslexia and a group that had reading problems but also suffered from cognitive deficits or psychiatric symptoms. Both groups benefited from the intervention, but the children with pure dyslexia profited most. In the group with co morbidity, the intervention programme was more successful in relatively younger children.

Tonnessen (1999) discussed option and limitations of cognitive psychological approach to the treatment of dyslexia. They concluded that to have flexible and functional combination of these, we must borrow ideas from cognitive psychology, connectionism, and behaviorism.

Morgan and klien (2000) reviewed case histories of learning disable children and found that all of them reported feelings of difference, inferiority, lonliness and isolation.

Hellondoorn and Joop (2000) investigated personnel experiences and adjustment of Dutch adults with dyslexia. Most participants felt a strong impact of the dyslexia on daily life and experienced many educational and career problems. Parental support appeared to be a powerful predictor of adult adjustment and well being.

Rescind and Goldberg (2003) investigated the presence of anxiety in learning disable children. They found that children and adolescents with learning disabilities experienced increased level of anxiety as compared to young people without learning disabilities.

Hanna Tur-Kaspa (2004) examined the social information processing skills of kindergarten children with developmental learning disabilities. Participants included 20 children with learning diasability and 20 children without disability. They were assessed on social information processing skills, feelings of loneliness, sense of coherence, and teachers ratings of behavioural problems. The results indicated that girls performed significantly lower on information processing steps than did girls without learning disability. Such differences were not found for boys.

Michal and Mario (2004) examined patterns of close relationship among school age children with learning disabilities as manifested in their attachment style, self perceived loneliness, sense of coherence, and teachers rating of their academic functioning. The sample comprised of 98 children with learning disability from regular classes in four Israeli public elementary schools, and 98 non leaning disable children from the same school. Their attachment style was significantly correlated with social and emotional adjustment but not with academic functioning.

Rutter (2004) conducted a study on sex differences in developmental reading disability. He suggested that the increased rate of reading disability in boys was the result of referral bias based on gender.

Asch (2005) in his literature review on learning disability concluded that much of the research on disability has stressed commonalities among individual with disabilities rather than addressed differences based on gender. Consequently little is known about the different characteristics and experiences of males and females with disabilities.

Form all these research evidences it appears that learning disabilities is a serious problem which not only interferes with academic achievement but also threatening to the psychological health of an individual. This could leads to many practical problems in learning disabled individuals life and results in complication in his/her social environment. In Pakistan there is dearth of research on the said problem and no indigenous test is available for the diagnosis of learning disabilities. However this study is an attempt to highlight the extent of the problem in Pakistan, investigating its social and

psychological repercussions, as well as to develop a valid and reliable indigenous test for diagnosis.

Chapter IV

Rationale of the study

In every caring society, a great deal of attention is paid to children who, for one reason or another, show difficulties in their ability to benefit from normal schooling. Such limitations are known as backwardness, retardation, handicap, mental defect and learning disability, which if severe enough can be readily identified and remedial educational training programmes could be implemented. However, in normal children, there are some who, in spite of average or even above average abilities, are unable to achieve the level of attainment commensurate with their intelligence. While we often put this discrepancy between ability and achievement to a lack of motivation, poor educational practices, boredom or sheer laziness, there is growing body of evidence which suggest that lack of achievement can be a consequence rather than cause of specific learning disabilities.

Specific learning disabilities can manifest in any one or combination of academic areas including oral expression, basic reading skills, reading comprehension, calculation and mathematics reasoning.

Student with learning disabilities face challenge to learn new material and retain old material. This not only frustrates the student but also the parents and teachers who care for them. The student themselves are desperate to become successful and they have to withstand such labels as "lazy" and "underachiever."

If specific learning disabilities are not diagnosed at proper time the child quickly loses self confidence and experience frustration, humiliation,

depression and anger which further exacerbate the situation. As a result students loose interests in studies and drop out from school.

In Pakistan education is not free, compulsory, or easily accessible to all children. This is especially true for girl child. According to Pakistan Integrated household survey (Round 4: 2001-02) 51% of the population ten years and older has ever attended the secondary school, about 38% the population ten years and over has completed primary level, 15% left before completing primary school. In Pakistan as a whole the percentage of males who have completed primary level is nearly double that of females, and the disparity is even more pronounced in rural areas because girls are more likely to leave school early than in boys resulting in higher proportion of drop out 18 % among girls than 8% among boys.

Another report shows that drop out rate in primary schools increased from 40% in 1996-1997 to 54% in 1999-2000, making Pakistan school drop out rate the highest in the world (Dawn-editorial; 17 Feb, 2005). Apart from other social and psychological reasons, one of the major reasons of drop out from school can be specific learning disabilities. Due to lack of awareness parents and teachers are unable to identify specific learning disabilities which results in different social and psychological problems like anxiety, anger, depression, poor interpersonal relationships and social rejection, consequently making the learning disabled child to lead miserable life despite many potentials. With the right diagnosis, intervention and support children with specific learning disabilities can excel in academics and becomes an active member of society which will further minimize the rate of drop outs from schools. But the available tools for the diagnosis of learning

disabilities are in English which is not applicable due to language barrier. Secondly their norms are not based on our culture which if applied can mislead diagnosis.

Keeping in view the dearth of previous research in pakistan on emotional squeal of learning disabilities in general and among girls in particular, no availability of indigenous tool for diagnosing specific learning disabilities and high rate of drop out among girl students, the present research was designed to develop an indigenous scale for diagnosing specific learning disabilities to investigate its implication for social psychological functioning among young girls by observing comorbidities related to specific leaning disabilities.

Chapter V

CHAPTER-V

OBJECTIVES AND RESEARCH PLAN

Objectives

The purpose of the research was to develop indigenous diagnostic scale for specific learning disabilities and to investigate its implications for social psychological functioning by observing comorbidity associated with specific learning disabilities among girls.

The following objectives were the focus of research.

1. To develop a screening checklist for specific learning disabilities.
2. To develop a comprehensive scale for specific learning disabilities.
3. To establish discriminant validity of the newly develop scale.
4. To assess the I.Q level of learning disable and non-disable girls to rule out the possibility of mental retardation.
5. To find out self image and psychological comorbidity i.e. manifestation of anxiety, aggression and depression among girls with specific learning disabilities and those who do not have such disabilities.

Hypotheses

The following hypotheses were formulated for the present research

1. Girls suffering from specific learning disabilities will exhibit poor performance on Learning Disabilities Scale.

2. Girls suffering from specific learning disabilities will have poor self Image than those who do not have such disabilities.

3. Anxiety, depression and aggression will be more prevalent among girls suffering from specific learning disabilities than those who do not have such disabilities.

4. Girls suffering from specific learning disabilities will have similar level of I.Q than those who do not have such disabilities.

5. Girls suffering from specific learning disabilities will score average or above average on I.Q test however their academic achievement will be inconsistent with their abilities.

Operational Definition of Variables

1. Specific Learning Disability

Conceptually specific learning disability is defined as, a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written which may manifest it self in imperfect ability to listen, think, speak, read, write or do mathematical formulations (Individual with disabilities act- IDEA 1990).

In the present research specific learning disabilities were assessed through newly developed scale in Urdu language which consisted of eighteen items related to reading, writing, arithmetic, spelling, attention, laterality and memory. Percentile ranks were computed on specific learning disabilities scale to determine the cut-off score (see table 6). The score below 50th percentile indicated high level of learning disability. The score above 50th

percentile indicated low or no learning disability. The score corresponding to 50th percentile was taken as a cut-off score.

2. Psychological comorbidity

Psychological comorbidity included nature of self image, anxiety, aggression and depression was assessed with the help of Human Figure Drawing Test. Twenty nine emotional indicators of Human figure Drawing Test were used to find out level of anxiety, aggression, depression and self image of the respondents.

Research plan

The research was carried out in two phases. The first phase consisted of the development of a screening check list , development of the scale to measure learning disabilities and establishing its discriminant validity.

The second phase comprised of assessing the I.Q level of learning disable and non disable girls and to investigate psychological comorbidity among the girls who have learning disabilities.

Phase 1

This phase consisted of the following steps.

Step 1-Development of screening checklist

The first step was to develop screening check list for the identification of children suffering from specific learning disabilities

Step 11-Generation of item for Learning Disabilities Scale (LDS)

The items for LDS were generated by using the following resources.

i. Review of existing literature

Extensive review of literature was initiated to identify common

Characteristics of specific learning disabilities.

ii. Focus group interviews

Focus group interviews were also conducted to generate items for the scale. Ten interviews were conducted with individuals having considerable experience in dealing with children with learning disabilities.

iii. Evaluation of item by experts

The item pool was given to judges to check the face validity of the scale. All the judges were psychologists, three of them having PhD and one having a M.Phill degree.

Step 111- Discriminant validity

To find out discriminant validity of indigenous scale it was administered on seventy five non-disable students. Results were matched with seventy five girls students who were diagnosed as suffering from learning disabilities on indigenous scale. Reported alpha value is .87(see table 1).

Phase 11

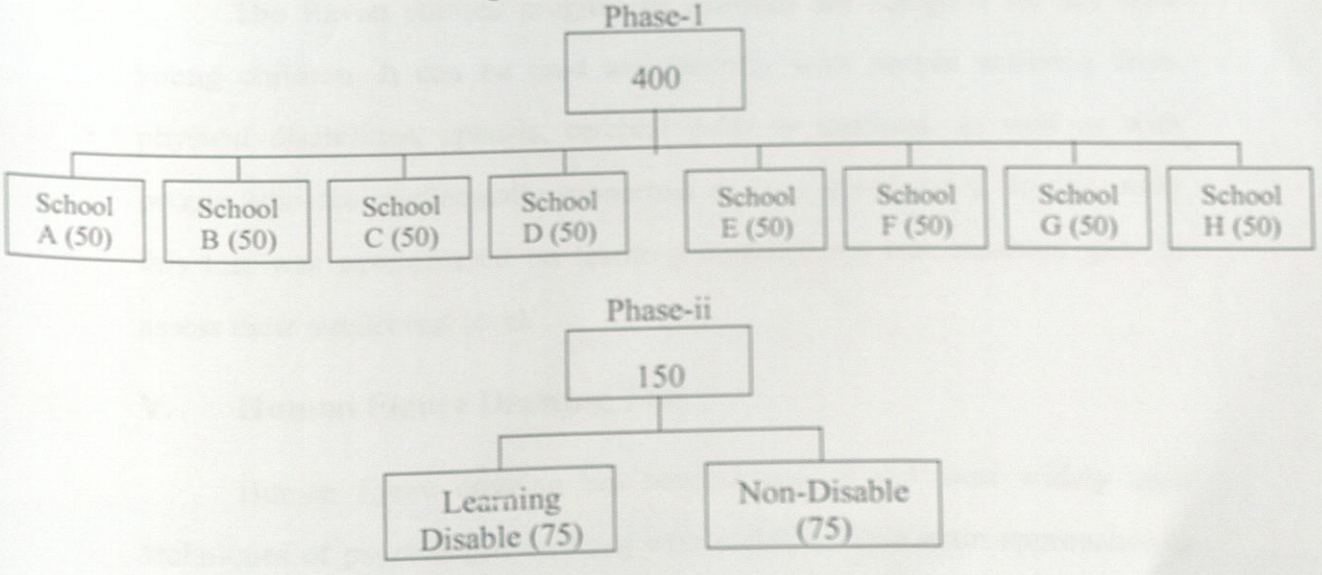
This phase of the research consisted of assessing the I.Q level of learning disable and non disable girls and to explore psychological co morbidity in order to find out implications of specific learning disabilities for social psychological functioning.

Method

Sample

A sample of 400 girls students ranging in age from 8 to 12 years were selected through simple random sampling technique for phase one of the study from different public and private schools in Peshawar situated in Cantt, City, Town and Hayatabad area. Total ten schools were randomly selected. School authorities were contacted and purpose of the study was explained to them. Out of ten, two schools refused to participate in the research. Those who showed willingness to participate were asked to provide the list of enrolled students in class three, four and five. The names of all enrolled students were randomly (lottery method) selected. Mean age of girls was 10. The Sample of the second phase comprised of seventy five diagnosed learning disabled students in phase one and seventy five non disable students ranging in age from 8 to12 years from different public and private schools in Peshawar situated in Cantt, City, town and Hayatabad area. Mean age of girls was 10 from class three, four and five.

Figure: Flow Chart of Sample



INSTRUMENTS

The data was collected with the help of four instruments.

I. Screening check list for specific learning disabilities

It consisted of 24 most common presenting symptoms of learning disabilities.

II. Specific learning disabilities scale

It consisted of eighteen items related to reading, spelling, writing, attention, memory, arithmetic, concept formation and laterality.

III. Semi-structured interview

Semi-structured interview was conducted from parents and teachers to collect information about nature, history, duration, intensity of the problem, girl's academic performance and behavioural problems in home and school.

IV. Raven Colored Progressive Matrices

The Raven colored progressive matrices are designed for use with young children. It can be used satisfactorily with people suffering from physical disabilities, aphasia, cerebral palsy or deafness, as well as with people who are intellectually subnormal or have deteriorated. In this study this test was administered on learning disabled and non disabled girls to assess their intellectual level.

V. Human Figure Drawing Test

Human figure drawing has become one of the most widely used techniques of psychologist working with children. Two main approaches to

the interpretation of Human Figure are as projective technique and developmental test of maturity. The foremost exponent of the projective approach was Macover, 1949. In this study this test was used to identify psychological comorbidity i.e. anxiety, depression, aggression and nature of self image among learning disabled and non disabled girls.

PROCEDURE

The research was conducted in two phases. In the phase one screening check list was developed for the identification of girls suffering from specific learning disabilities. Screening checklist was based on symptoms reported in case histories of children who suffered from learning disabilities. Twenty four symptoms were selected which most common were presenting symptom of specific learning disabilities with the consultation of four clinical psychologists. They were than checked against the diagnostic categories given in DSM IV. Pilot study was conducted to find out the diagnostic validity of screening checklist it was found that due to language barrier teachers were unable to understand the symptoms properly. Therefore the screening checklist was translated in to Urdu with the consultation of language experts. The standard procedure of translation was used. Initially the screening check list was given to language experts for translation. The translated version was discussed with other experts to choose best translation. Finally it was given to judges to decide on the symptoms that have diagnostic value. After careful assessment the checklist was finalized to use in the research. Extensive review of literature was initiated to identify common characteristics of specific learning disabilities for the development of indigenous scale for the diagnosis of specific learning disabilities. Review of

literature was done with the help of different resources which included books, research journals, magazines and internet search engines. Existing scales on specific learning disabilities were also consulted. Focus group interviews were also conducted to generate items for the scale. Ten interviews were conducted with individuals having considerable experience in dealing with children with learning disabilities. Four of them were practicing clinical psychologists and six were school teachers. Pool of item was generated based on most common presenting problems of learning disabilities. The item pool was given to judges to check the face validity of the scale. All the judges were psychologists, three of them having Ph.D and one having M.phill degree. Judges were briefed about the purpose of the study and requested to carefully examine the items in term of linguistic quality, expression of grammar, clarity, appropriateness and content validity. On the basis of review of the judges, items that appeared ambiguous were either rewritten or omitted. The final version of specific learning disabilities scale consisted of eighteen item which was again shown to the judges after the approval school authorities were contacted individually and the purpose of the study was explained to them. After their willingness for participation meeting was arranged with class teachers of 3rd, 4th, 5th grade. Purpose of the study was briefly discussed. Screening checklist and personnel information sheet was given to teachers and every item was explained to them in detail. Teachers were asked to assess the students with the help of screening checklist. Four hundred girls students were assessed in this way out of four hundred those students who responded yes to twelve or more than twelve symptoms were selected for further assessment and rest of them

were excluded as they were not showing symptoms of learning disabilities. Two hundred girl students who showed symptoms of specific learning disabilities on screening checklist were approached individually. After developing rapport with the students Specific Learning Disabilities Scale was administered. The written instructions were reproduced verbally. After the complete administration of scale it was checked for missing data. Absence of any response was noted down and students were asked to complete it. Out of two hundred girls students, seventy five girls were diagnosed as learning disabled. For establishing discriminant validity similar assessment procedure was adopted with seventy five non-disabled girl students.

In the second phase girl students who were diagnosed as suffering from specific learning disabilities on indigenous scale and non disabled girl students were contacted. After building rapport with the students I.Q test and Human Figure Drawing Test was administered individually. Finally semi-structured interview was conducted from parents and teachers to collect information about nature, history, duration, intensity of the problem, girl's academic performance and behavioural problems in home and school. School authorities were thanked for their cooperation.

The statistical package for social sciences was used for the analysis of data.

Chapter VI

CHAPTER-VI

RESULTS

In order to achieve the objectives of research statistical analysis was carried out with the help of computer package of SPSS (Statistical Package for Social Sciences).

The outcomes of the study are presented in three different sections to aid understanding. The first section lists the psychometric properties of the learning disabilities scale. The second section presents correlation analysis which shows the relationship between learning disable and non disable group with reference to their performance on learning disabilities scale.

The third section presents the t-test analysis to explore the differences in learning disable and non disable group on different items of learning disabilities scale.

Finally t-test was applied to investigate the difference in level of intelligence and psychological co morbidity of learning disable and non disable group.

PSYCHOMETRIC PROPERTIES

Alpha coefficient of the learning disabilities scale was carried out to measure the internal consistency of the scale

Table 1

Alpha coefficient of learning disabilities scale

(N=150)

	No. of Items	Alpha Coefficient
Leaning Disabilities scale	18	.87

The value of alpha coefficient indicates that the scale is reliable to diagnose learning disabilities.

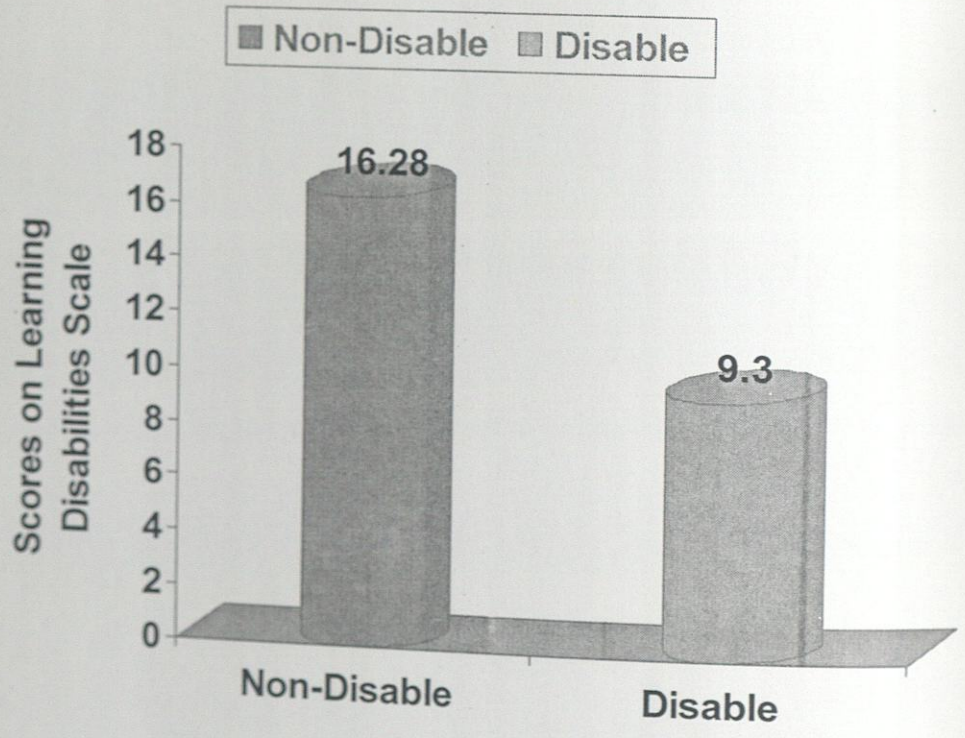


Figure-1. Mean of Scores of Learning Disable and Non-disable on Learning Disabilities Scale (N=150)

DISCRIMINANT VALIDITY

To determine discriminant validity of the scale, it was administered on seventy five non-disable girls students, t-test was applied on two sets of scores obtained from disable and non disable girls students.

Table 2

Discriminant validity of learning disabilities scale

(N=150)

Group	X	SD	t
Non-Disable (n=75)	16.28	1.07	25.49**
Disable (n=75)	9.3	2.11	

**P<.001

Table 2 shows that there is significant difference between learning disable and non-disable on learning disabilities scale which indicates that learning disabilities scale clearly differentiate between disable and non-disable group which demonstrate the discriminant validity of the scale.

CORRELATION ANALYSIS

In order to determine the internal consistency of learning disabilities scale item-total correlation was carried out.

Table 3

Item-total correlations of the learning disabilities scale (Items=18)

(N=15)

S. No	Items	R	S. No	Items	R
1	Identifying picture and rapid naming	.038	14	Identifying and naming	.774**
2	Bead threading	-	15	Writing name	.292**
3	Postural stability	.114	16	Pronunciation	.805**
4	One minute reading	.708**	17	Digit symbol	.814**
5	Two minute spelling	.794**	18	Multiplication	.652**
6	One minute writing	.332**			
7	Verbal fluency	.723**			
8	Laterality	.197**			
9	Subtraction	.379**			
10	Month forward	.618**			
11	Month reversed	.624**			
12	Digit forward	.528**			
13	Digit backward	.602**			

Table 3 shows that except for item no.1 and 3, all other items correlate significantly with the total score indicating highly significant internal consistency of scale.

Table 4

Correlation matrix of learning disabilities scale (N=150)

		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII
I	IdP	-	a	-.010	-.049	.111	.022	-.048	-.021	-.024	-.047	-.111	-.05	.049	.95	-.021	.10	.071	-.053
II	BT		-	A	A	a	A	A	A	a	A	a	A	A	a	a	a	a	a
III	PS			-	.196*	.036	.202*	.068	.215**	.180*	-.067	.086	.071	.402	.222	.721	.773	.222	.521
IV	OR				.-	.579**	.207*	.703*	.106	.273**	.295**	.343**	.295**	.351**	.472**	.234**	.509**	.511**	.386**
V	TS					-	.362**	.596**	.048	.296**	.451**	.459**	.359**	.375**	.575**	.166**	.621**	.581**	.504**
VI	OW						-	.090	.158	.020	.033	.198*	.164*	.158	.148	.270**	.164**	.231**	.180*
VII	VF							-	.046	.393**	.307*	.366**	.323*	.345**	.582**	.240**	.557**	.502**	.365**
VIII	LT								-	.236**	.051	.069	.092	.022	.066	-.064	.195*	.104	.084
IX	SB									-	.230**	.218**	.126	.119	.193*	-.675	.261**	.205*	.134
X	MF										-	.423**	.282**	.339**	.444**	.116	.480**	.462**	.431**
XI	MR											-	.204*	.293**	.412**	.128	.490**	.406**	.446**
XII	DF												-	.148	.438**	.155	.379**	.409**	.264**
XIII	DB													-	.419**	.086	.484**	.687**	.349**
XIV	IS														-	.236**	.616**	.635**	.480**
XV	WN															-	.195*	.161*	.146
XVI	PR																-	.677**	.401**
XVII	DS																	-	.467**
XVIII	MT																		-

*P<.05, **P<.01

Note: Read IdP as identifying picture, BT as bead threading, PS as postural stability, OR as one minute reading, TS as two minute spelling, OW as one minute writing, VPF as verbal fluency, LT as laterality, SB as subtraction, MF as months forward, MR as months reversed, DF as digit forward, DB as digit backward, IS as identifying shapes, WN as writing name, PR as pronunciation, DS as digit symbol, MT as multiplication.

For comparison between learning disable and non-disable norms were developed. The lower the score the more severe is the learning disability.

Table 5

Frequencies and cumulative percentages of scores of learning disabilities scale

(N=150)

Score	Frequency	Percentage	Com. Percentage
5.00	1	.7	.7
6.00	5	3.3	4.0
7.00	12	8.0	12.0
8.00	10	6.7	18.7
9.00	16	10.7	29.3
10.00	5	3.3	32.7
11.00	13	8.7	41.3
12.00	8	5.3	46.7
14.00	7	4.7	54.0
15.00	11	7.3	61.3
16.00	20	13.3	74.7
17.00	32	21.3	96.0
18.00	6	4.0	100.0

Table 5 shows the frequencies and cumulative percentages of scores on learning disabilities scale. The minimum obtained score is 5.00 showing severe learning disabilities and maximum score is 18 showing no learning disability. At cumulative percentage of 54 the corresponding score is 14 which indicates that cut off score of learning disability scale is 13.

For diagnosing the learning disabilities percentile norms of learning disabilities scale were developed

Table 6

Percentile norms of total score on learning disabilities scale

(N=150)

Percentiles	Scores	Classification Categories
5	6.47	Learning Disable
10	7.27	
15	7.95	
20	8.53	
25	9.14	
30	9.85	
35	10.66	
40	11.42	
45	12.25	
50	13.54	
55	14.55	Non-Disable
60	15.22	
65	15.70	
70	16.11	
75	16.40	
80	16.69	
85	16.98	
90	17.36	
95	17.36	
99	-	

Table 6 shows percentile norms of learning disabilities scale the score below the 50th percentile shows that individual is suffering from learning disabilities while scores above the 50th percentile show that there is no learning disability.

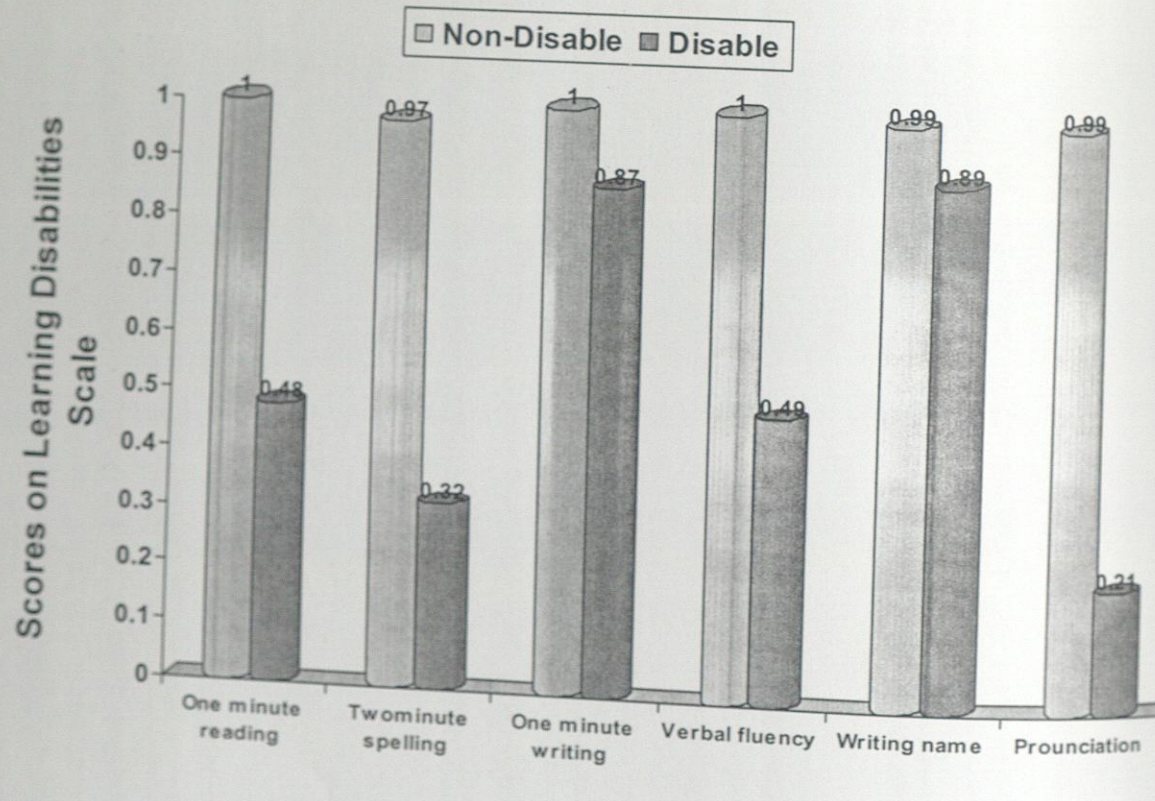


Figure-2. Mean of Scores of Learning Disable and Non-Disable Group on Test Items Related to Literacy Skills (N=150)

Table 7

Mean, standard deviation, t-value and level of significance of learning disable and non-disable group on test items related to literacy skills.

(N=150)

	Non-Disable (n=75)		Disable (n=75)			
Items	X	SD	X	SD	t	P
One minute reading	1.00	.00	.48	.34	8.954**	.000
Two minute spelling	.97	.16	.32	.47	11.388**	.000
One minute writing	1.00	.00	.87	.34	3.374**	.001
Verbal fluency	1.00	.00	.49	.50	8.718**	.001
Writing name	.99	.12	.89	.31	2.438**	.05
Pronunciation	.99	.12	.21	.41	15.638**	.000

Table 7 shows that there is significant difference in learning disable and non-disable group on items assessing literacy skills which indicates that learning disable group have severe deficit in reading and writing as compare to non-disable group which performed well on these tasks. It suggests that learning disable group is deficient in acquiring basic literacy skills.

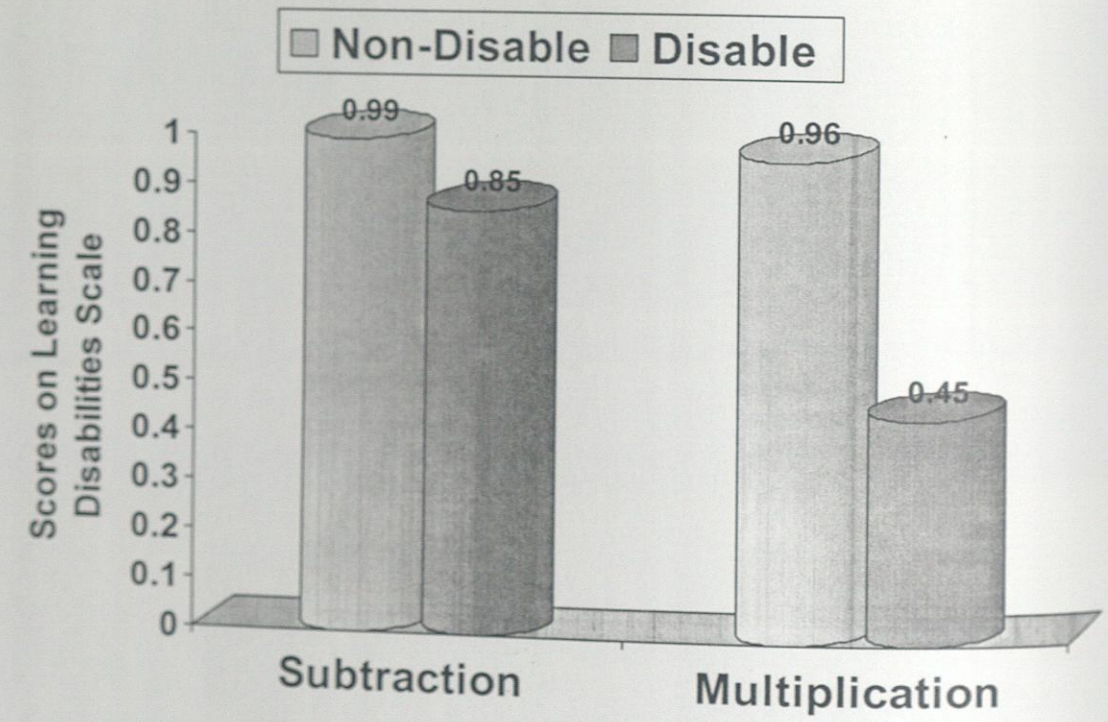


Figure- 3. Mean of Scores of Learning Disable and Non-Disable Group on Test Items Related to Literacy Skills (N=150)

Table 8

Mean, standard deviation, t-value and level of significance of learning disable and non-disable group on items assessing numeracy skills

(N=150)

	Non-Disable (n=75)		Disable (n=75)			
Items	X	SD	X	SD	t	P
Subtraction	.99	.12	.85	.36	3.084**	.001
Multiplication	.96	.20	.45	.50	8.147**	.000

Table 8 shows that there is significant difference between learning disable and non-disable group on items assessing numeracy skills. Learning disable group showed poor performance on items involving subtraction and multiplication which indicates deficits in numeracy skills in this group as compared to non-disable group.

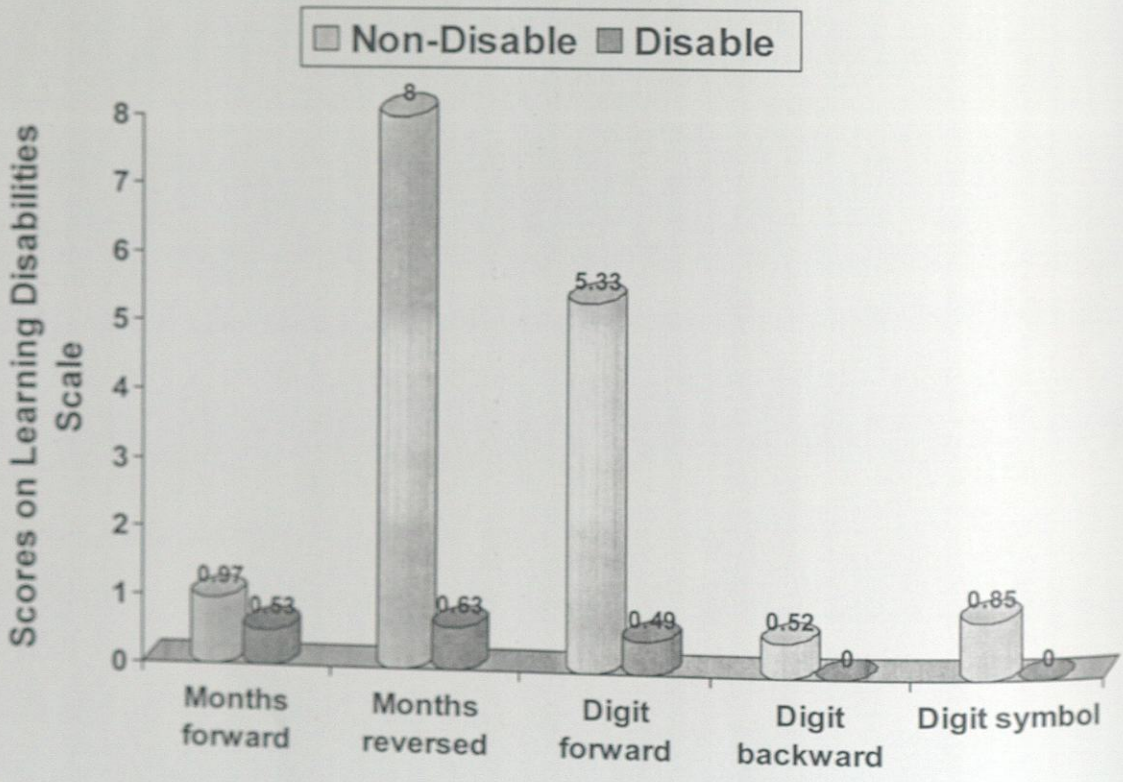


Figure-4. Mean of Scores of Learning Disable and Non-Disable Group on Item Assessing Attention and Memory (N=150)

Table 9

Mean, standard deviation, t-value and level of significance of learning disable and non-disable group on items assessing attention and memory

(N=150)

	Non-Disable (n=75)		Disable (n=75)			
Items	X	SD	X	SD	t	P
Months forward	.97	.16	.53	.50	7.220**	.000
Months reversed	8.00	.49	.63	.27	8.480**	.000
Digit forward	5.33	.50	.49	.23	6.905**	.000
Digit backward	.52	.50	.00	.00	8.954**	.000
Digit symbol	.85	.36	.00	.00	20.750**	.000

Table 9 shows that there is significant difference between learning disabled and non-disabled group on items assessing attention and memory ability. Learning disabled group displayed deficits in all items involving attention and memory which clearly indicates that learning disabled group have severe problems in registering and retention of incoming information.

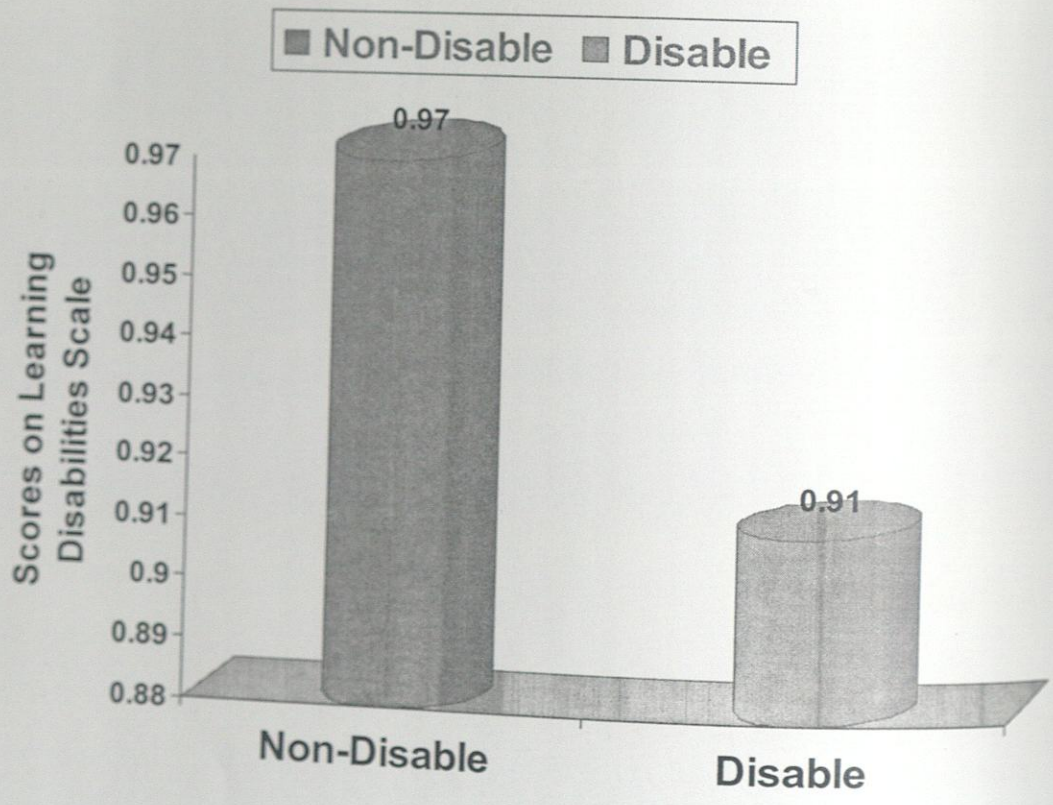


Figure-5. Mean of Scores of Learning Disable Non-Disable Group on Test Item Assessing Laterality (N=150)

Table 10

Mean, standard deviation, t-value and level of significance of learning disable and non-disable group on test item assessing laterality.

Group	X	SD	T	P
Non-Disable (n=75)	.97	.16		
			1.725**	.087
Disable (n=75)	.91	.29		

Table 10 shows that there is significant difference between learning disable and non-disable group on test item laterality which indicates that learning disable group have problems in perceiving and identifying right/left parts of the body which further confirm problem in information processing in disable group as compared to non-disable group.

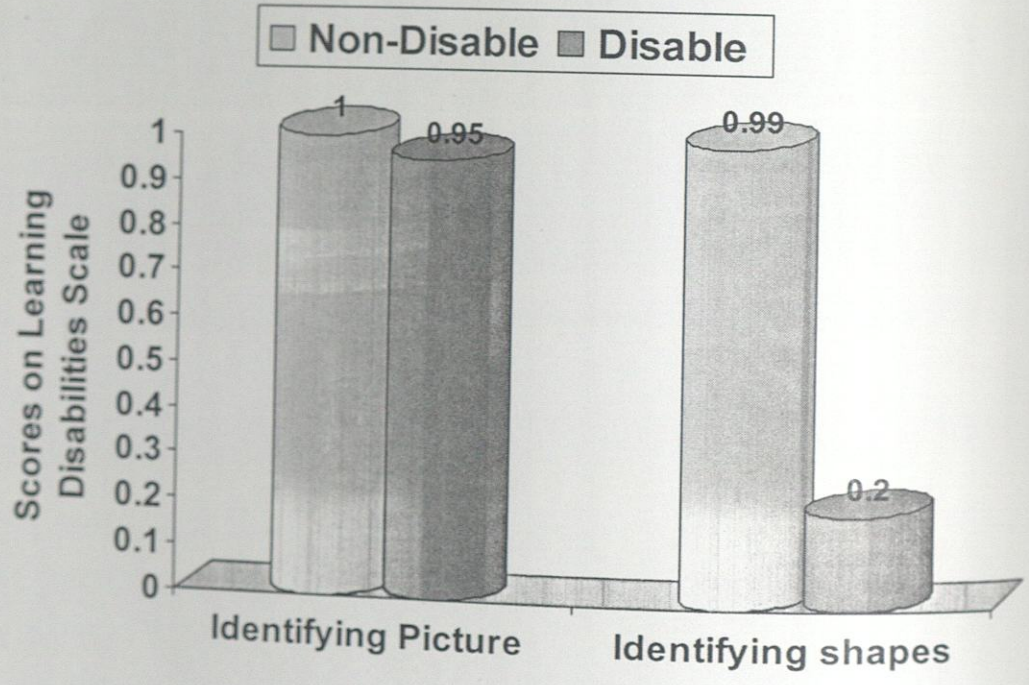


Figure-6. Mean of Scores of Learning Disable and Non-Disable Group on Items Assessing Concept Formation of Shapes (N=150)

Table 11

Mean, standard deviation, t-value and level of significance of learning disable and non-disable group on items assessing concept formation of shapes.

(N=150)

	Non-Disable (n=75)		Disable (n=75)			
Items	X	SD	X	SD	t	P
Identifying picture And rapid naming	1.00	.00	.99	.12	1.000	.319
Identifying and naming shapes	.95	.23	.20	.40	14.000**	.000

Table 11 shows that there is no significant difference between learning disable and non-disable group on item involving identification of picture and rapid naming. But both groups showed significant difference on item involving identifying and naming shapes which indicates that learning disable group have problem in handling shapes where more concept clarity is needed as compared to non-disable group. It shows that learning disable group have deficits in the concept formation of shapes.

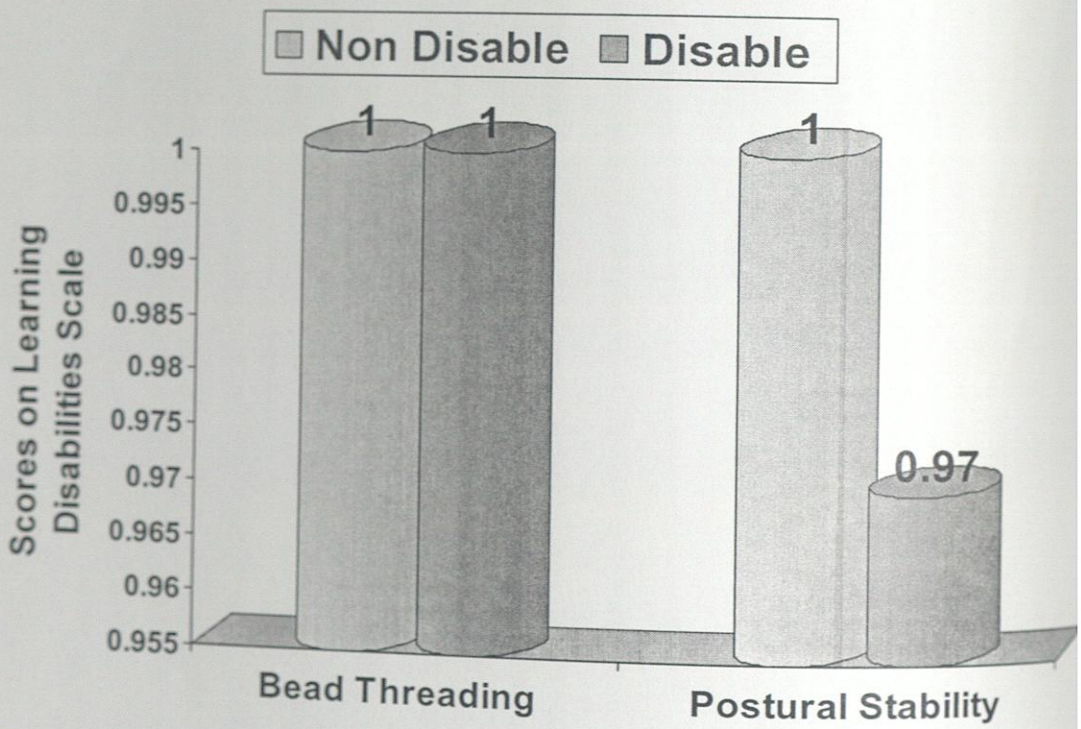


Figure-7. Mean of Scores of Learning Disable and Non-Disable on Items assessing Motor Skills (N=150)

Table 12

Mean, standard deviation, t-value and level of significance of learning disable and non-disable on items assessing motor skills.

(N=150)

	Non-Disable (n=75)		Disable (n=75)			
Items	X	SD	X	SD	t	P
Bead threading	1.00	.00	1.00	.00	-	-
Postural stability	1.00	.00	.97	.16	1.424	1.57

Table 12 shows that there is no significant difference between learning disable and non-disable group on items assessing motors kills which indicates that both groups performed equally well on these tasks and there is no deficits in motor skill in learning disable group.

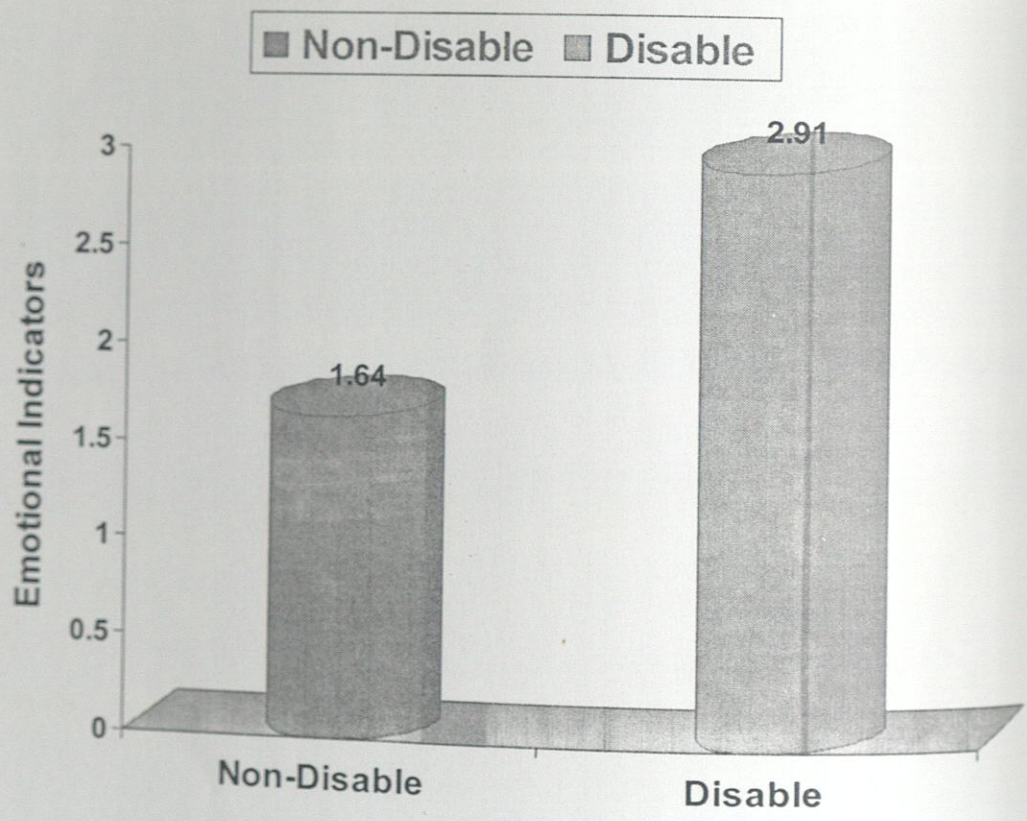


Figure-8. Mean of Number of Emotional Indicators of Learning Disable and Non-Disable on Human Figure Drawing Test (N=150)

Table 13

Mean, standard deviation, t-value and level of significance of non-disable and learning disable group on emotional indicators on human figure drawing test.

Group	X	SD	T	P
Non-Disable (n=75)	1.64	.90	-6.964**	.000
Learning Disable (n=75)	2.91	1.30		

Table 13 shows that there is significant difference between learning disable and non disable group on emotional indicators on human figure drawing test which confirms the presence of emotional problems in this group as compare to non-disable group.

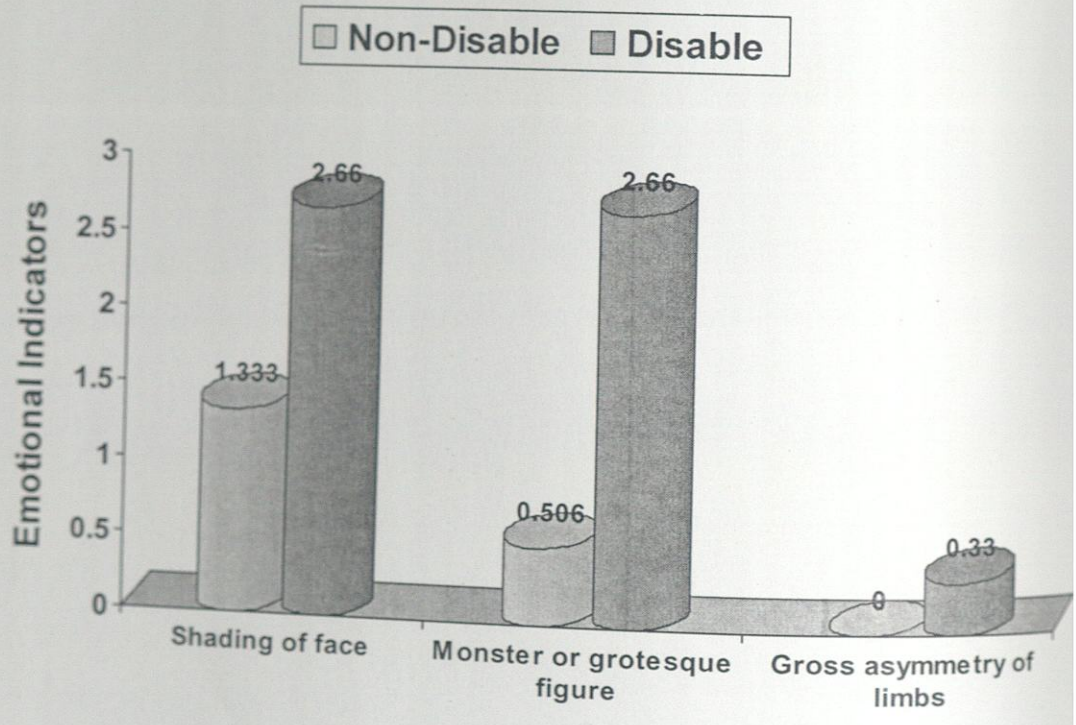


Figure-9. Mean of Number of Emotional Indicators Showing Poor Self-Image of Learning Disable and Non-Disable Group on Human Figure Drawing Test (N=150)

Table 14

Mean, standard deviation, t-value and level of significance of learning disable and non-disable on emotional indicators showing poor self-image on human figure drawing test

(N=150)

Emotional indicators	Non-Disable (n=75)		Disable (n=75)			
	X	SD	X	SD	t	P
Shading of face	1.333	.1155	2.667	.4452	-4.770**	.000
Monster or grotesque figure	.5067	.5033	2.667	16.22	7.861**	.000
Gross asymmetry of limbs	.000	.000	.333	.474	-6.083	.000

Table 14 shows that there is significant difference between learning disable and non-disable on emotional indicator showing poor self-image which indicates that learning disable group have poor self-image, as compared to non-disable group who have good self-image.

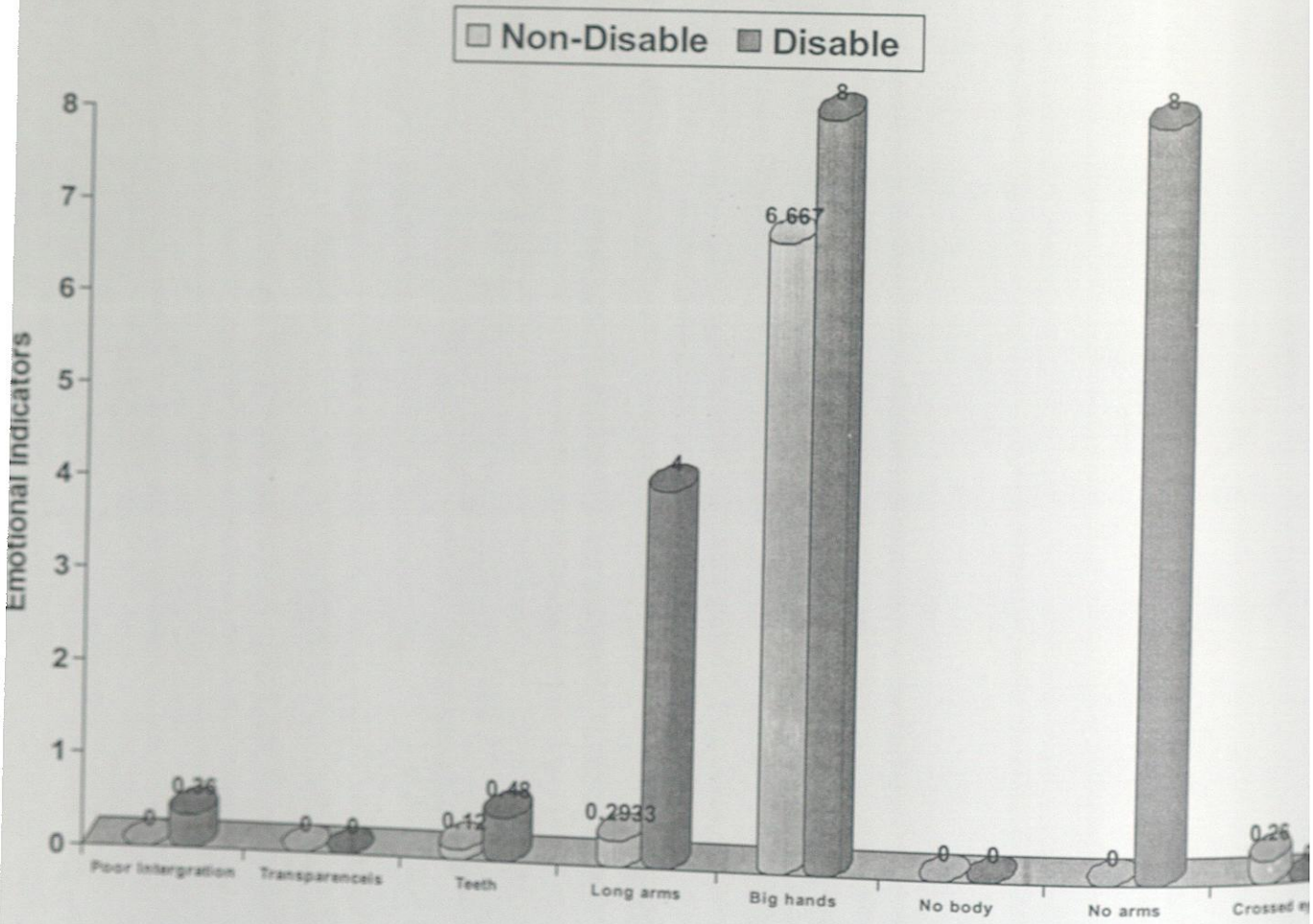


Figure-10. Mean of Number of Emotional Indicators Showing Aggression of Learning Disable and Non-Disable Group on Human Figure Drawing Test (N=150)

Table 15

Mean, standard deviation, t-value and level of significance of learning disable and non-disable group on emotional indicators showing aggression on human figure drawing test.

Emotional indicators	Non-Disable (n=75)		Disable (n=75)			
	X	SD	X	SD	t	P
Poor integration of parts or figure	.000	.000	.3608	.4832	-6.452**	.000
Transparencies	.000	.000	.000	.000	-	-
Teeth	.1200	.3271	.4800	.5030	-5.196**	.000
Long arms	.2933	.1973	4.000	.4584	-4.397**	.000
Big hands	6.667	.2731	8.000	.2511	.311	.756
No body	.000	.000	.000	.000	-	-
No arms	.000	.000	8.000	.2731	-2.537*	.012
Crossed eyes	.2667	.4452	.000	.000	5.187**	.000

Table 15 shows that there is significant difference between learning disable and non-disable on five out of eight emotional indicators showing aggression on human figure drawing test which indicates that learning disable group is more aggressive than disable group.

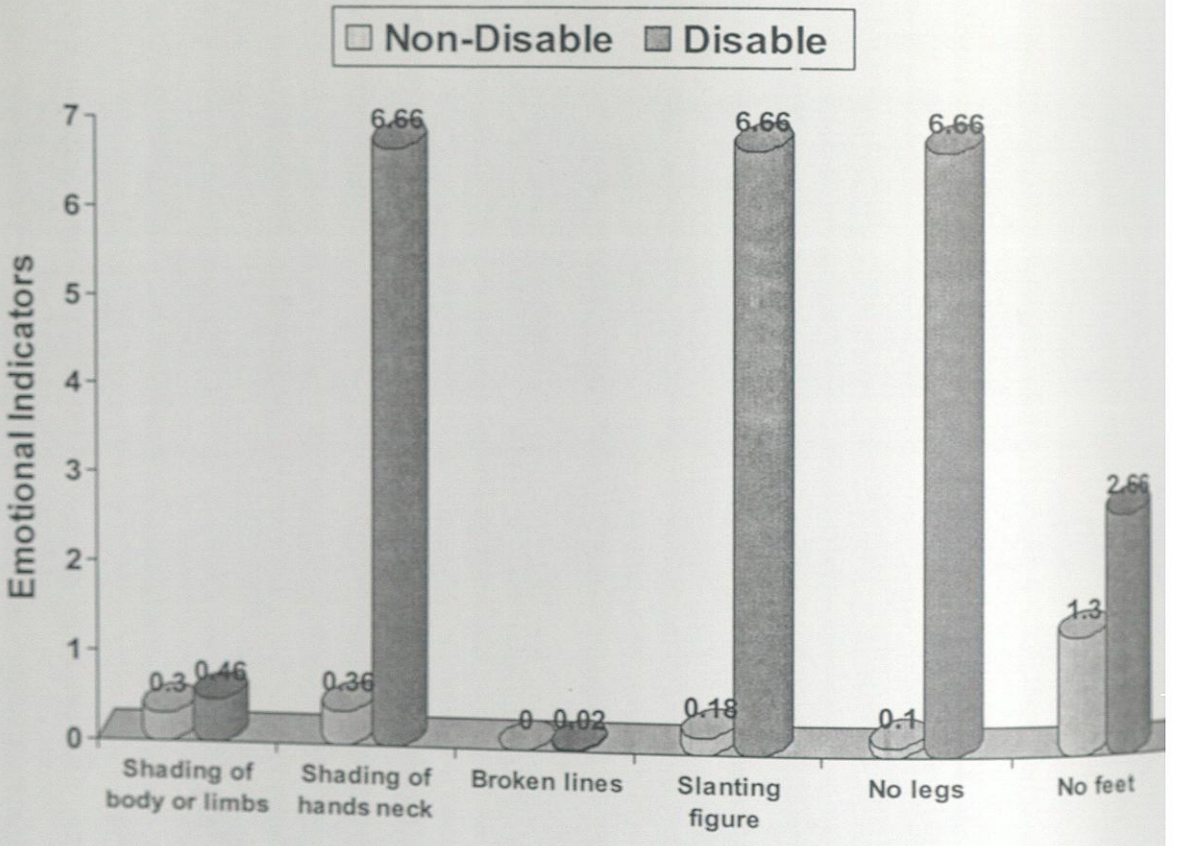


Figure-11. Mean of Number of Emotional Indicators Showing Anxiety of Learning Disable and Non-Disable Group on Human Figure Drawing Test (N=150)

Table 16

Mean, standard deviation, t-value and level of significance of learning disable and non-disable group on emotional indicators showing anxiety on human figure drawing test.

(N=150)

Emotional indicators	Non-Disable (n=75)		Disable (n=75)			
	X	SD	X	SD	t	P
Shading of body or limbs	.3067	.2262	.4642	5.333	-4.249**	.000
Shading of hands neck	.3600	.2511	6.667	.4832	4.665**	.000
Broken lines	.000	.2511	.02	.000	2.299**	.000
Slanting figure	.1867	.3923	6.667	.2511	2.231	.027
No legs	.1067	.3108	6.667	.2511	-2.537	.387
No feet	1.370	.1170	2.667	.1622	.556	.579

Table 16 shows that there is significant difference between learning disable and non-disable group on three emotional indicators showing anxiety which indicates the presence of anxiety in learning disable as compared to non-disable group.

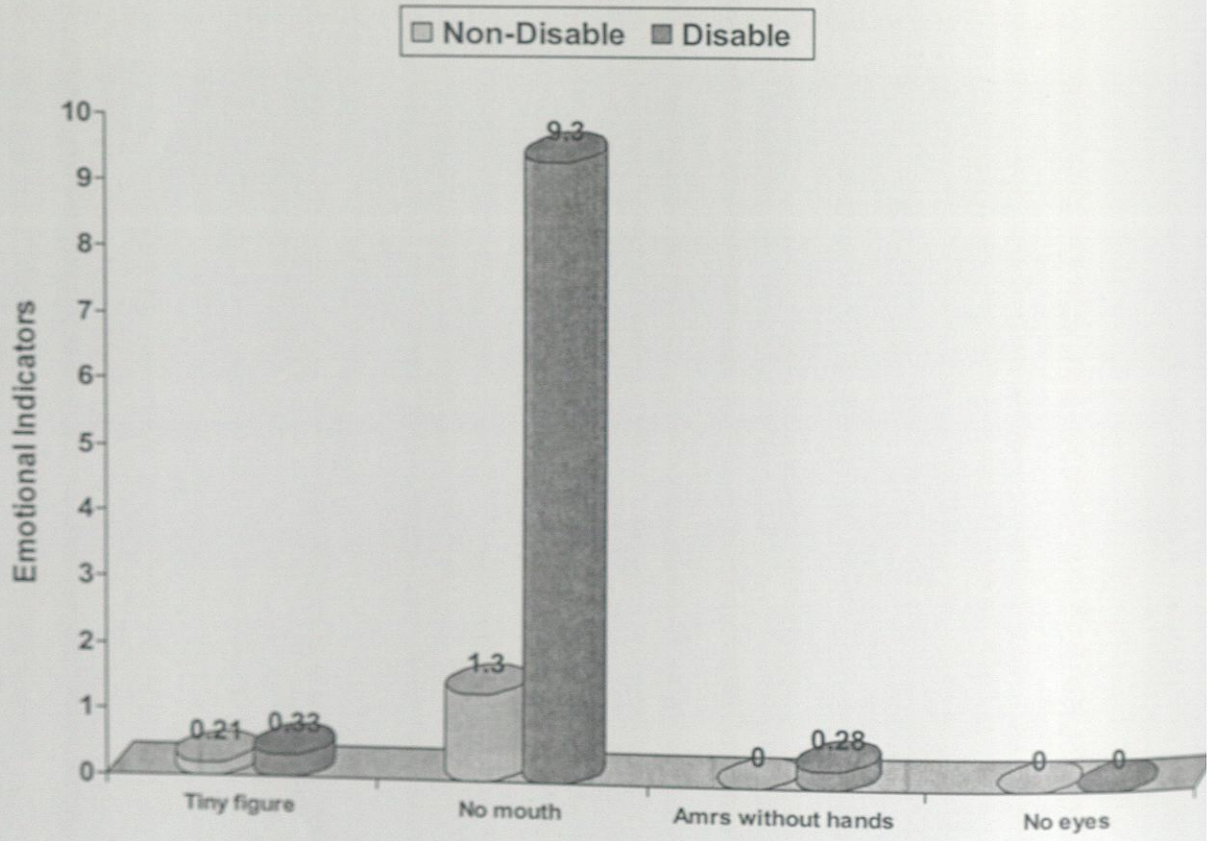


Figure-12. Mean of Number of Emotional Indicators Showing Depression of Learning Disable and Non-Disable Group on Human Figure Drawing Test (N=150)

Table 17

Mean, standard deviation, t-value and level of significance of learning disable and non-disable group on emotional indicators showing depression on human figure drawing test.

Emotional indicators	Non-Disable (n=75)		Disable (n=75)			
	X	SD	X	SD	t	P
Tiny figure	.2133	.4124	.333	.4746	-1.653**	.100
No mouth	1.351	.1162	9.333	.2929	-2.181*	.031
Arms without hands	.000	..000	.2800	.4520	5.364**	.000
No eyes	.000	.000	.000	.000	-	-

Table 17 shows that there is significant difference between learning disable and non-disable on emotional indicators showing depression which indicates that learning disable group is suffering from depression as compared to non-disable group.

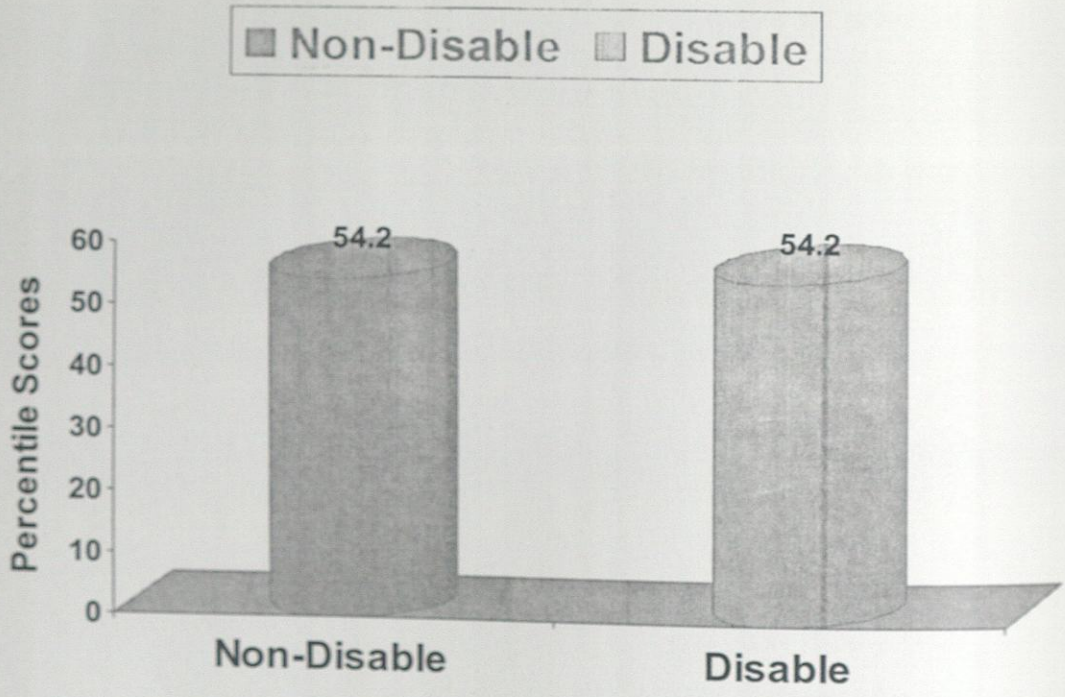


Figure-13. Mean of scores of learning disable and non-disable on coloured progressive matrices (N=150)

Table 18

Mean, standard deviation, t-value and level of significance of learning disable and non-disable group on coloured progressive matrices

(N=150)

Group	X	SD	T	P
Non-Disable (n=75)	54.21	10.62	.099	.921
Learning Disable (n=75)	54.21	10.86		

Table 19 shows that there is no significant difference between learning disable and non-disable on colourd progressive matrices test which indicates that learning disable group have the same level of intelligence as non-disable group.

Chapter VII

CHAPTER-VII

DISCUSSION

The major objective of this study was to develop an indigenous scale for diagnosing specific learning disabilities among young girls and to investigate its implications for social psychological functioning by observing comorbidities related to specific learning disabilities among learning disable and non disable girls. Review of literature on different types of learning disabilities and most common presenting symptoms of specific learning disabilities enabled the researcher to devise items to diagnose specific learning disabilities among young girls. As specific learning disabilities can manifest it self in multiple symptoms, a scale was devised which covered different types specific learning disabilities related to literacy skill, numeracy skills, attention,laterality, concept formation of shapes and motor skills. The deficit in literacy skills was measured with the help of items related to reading, writing, spelling, verbal fluency, writing name and pronounciation. Numeracy skills were assessed with help of items related to subtraction and multiplication. Deficiency in attention and memory was assessed with help of months farward, months reversed, digit forward, digit backward and digit symbol. Item related to laterality included identification of right/left parts of the body. The ability to form concepts of different objects and shapes was assessed with help of items related to identification of picture and naming shapes and problems in motor skills was assessed with the help of bead threading and postural stability. Alpha coefficient of the scale shows that the scale is highly reliable to diagnose specific learning disabilities scale (table

1). Discriminant validity was also established which demonstrated that learning disability scale can discriminate well between learning disabled and non disabled girls students (table 2). Correlation analysis shows that except item no.1and 3, all other items correlated significantly with the total scores indicating highly significant internal consistency of the scale (table, 3 & 4). On the bases of these correlations it can be safely said that the present scale can accurately diagnose specific learning disabilities.

The norms of the scale were expressed in terms of percentiles, which are easy to comprehend. The use of the present scale for diagnostic purpose is facilitated by the provision of percentile scores. Table 6 provides percentile norms with classification categories for the learning disabled and non disabled sample based on total scores. A low score on this scale indicates that the presence of specific learning disabilities while high score indicates that is no learning disability.

The findings suggest that there is high prevalence of specific learning disabilities among girls, because out of two hundred girls seventy five were diagnosed as suffering from specific learning disabilities. This means thirty seven percent girls in our sample were learning disabled. Our findings revealed that girls suffering from learning disabilities exhibited poor performance on learning disabilities scale as compared to non-disable girls (table 2,$t=25.4, p<.001$) which supported our first hypothesis i.e. Girls suffering from specific learning disabilities will exhibit poor performance on learning disabilities scale. The newly developed scale assessed deficits in different areas related to learning process including literacy skills, numeracy skills, attention, memory, laterality, concepts formation of shapes and motor

skills. Learning disabled girls showed poor performance in all these areas (table,7,8,9,10,11,12) but they showed significantly poor performance on literacy skills which mainly included reading, writing and spelling (table 7,t=8.94,p<.001). Deficiency in these skills suggest that these girls are having problem in interpreting the symbols, making correct sounds and understanding the sequence, difficulty in following instructions, difficulty in formulating ideas when conversing or giving a talk. All these difficulties results in poor performance in task related to reading, writing and spelling which are crucial for education. It also affects the speed of processing and short term memory. Our results are supported by large number of studies related to deficits in learning disabilities. For example Sukhan et al. (1999) examined naming speed deficits and phonological memory deficits in Chinese developmental dyslexic. Twenty Chinese dyslexic children in Honking were compared with twenty average readers of the same reading level in naming speed, naming digits, colours, pictures, Chinese characters and phonological memory skills. The results showed that the naming speed of Chinese dyslexic children was significantly poor than control group. The Chinese dyslexic children also performed significantly worse than control in all the phonological memory tasks.

Similarly Engel et al. (2000) examined reading difficulty characteristics in Hebrew in three reading impaired population. Two were groups of dyslexic and third group comprised sixty one readers with severe learning impairment. The subjects were tested with conventional Hebrew reading test. Reading errors were examined in three groups. Findings revealed differences in reading difficulties between three groups. Dyslexics

groups performed poor on reading test as compared to the third group. Similarly Wilson et al. (2001) investigated the phonological processing skills of university students with dyslexia. Fifty nine students participated in this study 28 with reading disabilities and thirty one were without reading disabilities. The dyslexic group performed significantly less well on standardized measures of reading and spelling. The control group performed significantly better on all phonological processing measures involving accuracy and response time. In another study Goswami et al. (2000) conducted studied o English developmental dyslexics by comparing picture naming performance of children to the picture naming performance of non dyslexics. Results showed that developmental dyslexics have difficulty in retrieving the phonological codes of known names.

Due to poor literacy skills and slowness in the speed of processing information learning disabled child tend to operate in a generally muddled and untidy way. They may forget assignments and miss dead lines. Some children have outstanding creative skills, others have strong oral skills but unfortunately these creative skills go unrecognized within school as usually the teacher's response to these children is negative. Teachers rate their student ability mostly on performance in reading and writing and due to their poor performance they ignore or underestimate child abilities which further make the learning disabled child vulnerable to develop negative perceptions about his or her abilities. Our study also explored the relation ship of learning disabilities and poor self image. Findings supported our second hypothesis which stated that, "Girls suffering from specific learning disabilities will have poor self image than those who do not have such

disabilities" (table, 12, t=6.964,p<.001). Learning disabled girls showed significantly high number of emotional indicators suggesting poor self image than non disabled girls. Development of poor self image is inevitable due to negative reactions from parents, teachers, peers and poor academic performance which further generate feelings of inadequacy, failure, hopelessness and helplessness in learning disabled girls. Socially learning disable child is often named as foolish, silly, or feeble minded. So it is not only inefficiencies that make learning disability a serious problem but also the adverse reactions and feed back they receive from their social surroundings. Therefore the presence of poor self image suggest that a child lacks self confidence, is overwhelmed by challenges in academic and social environment or has little hope for future. In case of girl child the situation is even worse as she has to struggle not only for learning disability, poor self image but also for her gender. Similar findings are revealed by the previous researchers.

Fawcet (1995) discussed the feelings of twenty dyslexic school children having specific disabilities in the area of reading. These children reported that becoming aware that they were not learning things which their peer seemed to find easy, their first response was almost always to conceal it. Crealock (1995) concluded that sufferings that is endued by dyslexic children in school and the resultant psychological scarring is hard to quantify, but it adversely effect the emotional well being, motivation and behavioral stability of the dyslexic. Similarly Kabala and Furness (1996) found that as many as seventy five percent of children with learning disability have social skill deficits, problems in establishing and maintaining

friendship, feelings of loneliness and low self esteem. In another study Nirit Bauminger (2005) examined social information processing and complex emotional understanding capabilities in children with and without learning disabilities. Result showed that children with learning disability had major difficulties in social information processing, fewer solutions to problems, less appropriate response decisions and low self esteem.

The difficulties in learning experienced by learning disabled pupils may also lead to social and behavioral difficulties in class and at home. The frustration of prolonged failure on a range of curriculum subjects, resulting in feelings of insecurity and lack of confidence can have profound effect upon social status, friendship patterns in class, acceptance and adjustment in the play ground. Aggressive and anti social behavior may result from stress that they go through. The findings of the present study also reveled the positive relationship of learning disabilities with anxiety, depression and aggression which supported our third hypothesis (table, 15, 16, 17, 18) which stated that, "Anxiety, depression and aggression will be more prevalent among girls suffering from specific learning disabilities than those who do not have such difficulties." All the learning disabled girls showed greater number of emotional indicators showing anxiety, aggression and depression than non disabled girls. The reason may be that children with specific learning disabilities begin to wonder if they can trust their vision of the world, because they see it differently. Their visual or auditory processing may not be precise, their thinking or time management may be slightly organized or they may have trouble reading subtle social cues. So many children feel out of control internally and try to take control in other aspects

of their lives, apart from this at school, underachieving pupils may be perceived as lazy and not trying hard enough and their failure may be viewed in terms of poor behavior and attitude. Increased impatience and an attitude of blame on part of the teacher intensify the pupil anxiety, frustration, and confusion. This frustration and confusion will further manifest itself in aggression and depression. Aggressive behavior is inevitable in learning disable children because it is one of the responses under frustrating situation. Some pupils withdraw when frustrated and others intensify their efforts to reach a goal by non aggressive means. But learning disable children are prone to equate school achievement with competency and loss of competence led to the feelings of inadequacy, depression, withdrawal and uncaring attitude.

Depression might also evolve out of feelings of frustration due to lack of control over problem and the environment. Experiencing significant levels of emotional distress or behaving in ways, which others find difficult to understand or accept can have devastating impact on life experiences of learning disable child and their families. Being depressed or regularly experiencing anxiety is likely to have significant impact on relationships. Emotional and behavioral difficulties also interfere with education and may lead to social exclusion. Previous researchers also supported the presence of psychological comorbidities among children suffering from learning disabilities.

Margalit and Zak (1984) found that children with learning disabilities have higher level of anxiety than do their peers without disabilities. Specifically they tended to feel more often that most of the events are

beyond their control. Mrgalit and Shulman (1986) suggested that anxiety displayed by learning disabilities may be expressed in somatic complaints. Abrams(1991) found that failure experienced by students with learning disabilities result in excessive anger which can be expressed outwardly on other or inwardly on themselves in the from self damaging act. In another study Bawden (1992) reviewed a large number of studies using human figure drawing test for finding relationship between learning disability and behavioral difficulties and concluded that learning disabilities are associated with aggression because learning disabled children exhibited greater number of emotional indicators showing aggression on human figure drawing test like poor integration, teeth and shading. Fristed et al. (1995) found the presence of learning disabilities among a sample of clinically depressed hospitalized children to be seven times higher than in general population. Mag and Bahrens (1999) found that prevalence of depression in children with learning disabilities range from fourteen percent to twenty four percent. The greater risk for depression evolves from specific learning visual-spatial difficulties because it interferes with social functioning resulting in co morbid presence of depression.

Manifestation of underlying physiological and emotional difficulties further intensifies the situation in classroom and school where teachers judges the intelligence level of a child by his performance in class and home assignments where reading and writing skills are needed which are deficient in learning disable child. Resultantly the child is the labeled as lazy, slow, below average and silly. It is often said that learning disability is an invisible disability. Other disabilities or handicaps are usually easily visible but the

existence of learning disability can only be deduced from the fact that there is discrepancy between child's potential i.e. intellectual level and his achievement, performance at reading and spelling etc. In the present research Raven Colourd Progressive Matrices was used to assess the intelligence level of the learning disabled and non disabled girls students. Results demonstrate that there is no significant difference between learning disable and non-disable on intelligence test scores which supported our fourth hypothesis that, "Girls suffering from specific learning disabilities will have similar level of I.Q than those who do not have such disabilities" (table 19,t =.099,p>.921). This shows that despite having similar level of intelligence girls with learning disabilities had to face adverse circumstances and developed certain psychopathologies compared to the girls without such disabilities. In a similar research Seigal (1999) found that I.Q scores of learning disable children were similar to non-disable children on performance scale of WISC-R. Low scores on verbal scales may be the result of learning disability. Beale (2000) conducted a study on school children suffering from learning disabilities. He asked school psychologists to independently score I.Q test from identical records of students in which there was no information about the learning disabilities of the student. All of them came up with I.Qs ranging from 80 to 120 for learning disable and non disable children.

Several studies have explored the differences in children with and without learning disabilities on measure of reading and other cognitive functions suggested that learning difficulties are caused by weakness in working memory (Seigal & Riyan 2001). Rutter (2004) found that I.Q

scores of learning disable children were approximately normally distributed but the reading achievement score did not show the same normal distribution. Share et al. (2001) found low mathematical achievement in learning disable group as compared to control group who performed well on mathematical achievement test. Both the groups performed well on performance task of Wisc -R.

Despite no significant differences on I.Q test among learning disable and non disable girls in the present research, the learning disabled girls showed poor performance in academics which supported our fifth hypothesis that, "Learning disable girls will score average or above average on I.Q test however their academic achievement will be inconsistent with their abilities." This was also supported by their class teachers and their previous academic records. This may be due to the fact that learning disabilities encompass a variety of impairment in perceptual and motor functioning including phonological skills, short term memory and sequencing problems which adversely effect child's academic performance. The learning disable child has to face internal deficits and external pressures from the external environment and in trying to cope with these pressures the child may loose motivation to learn at all. Untrained teacher further exacerbate the situation by expecting similar level of performance with the similar pace from these children as non disable children, which leads to discrepancy between child intelligence and his achievement. In the present study the learning disabled girls exhibited over all poor performance on learning disabilities scale but they showed severe deficiency in reading, spelling, verbal fluency, pronunciation, attention, multiplication and

laterality which suggest that in our culture the clinical picture of the learning disabilities among girls is predominantly evident in problems of reading, spelling, verbal fluency, pronunciation, attention, multiplication and laterality. The present scale was developed in Urdu and assessed the reading, writing, spelling and verbal fluency of girl's students in this language. Urdu is the national language of Pakistan which is commonly spoken, if the girls are showing deficiency in this language we may expect severe deficiency in English and other regional languages also. Acquisition of language is the basic skill required for getting education which if not acquired results in poor academic performance, lack of motivation initially and drop out from school ultimately. Which further contribute to increase in illiteracy rate rather than increase in literacy rate. In Pakistan people speak more than one language and in school the children are burdened with more than two languages at the same time. Learning exposure to mother tongue, national language and international language simultaneously make the task more difficult for all the students in general and learning disabled child in particular. As a result of disability the learning disabled child feels difficulty in concentrating on phonemes, semantics and syntax of different languages at the same time because of problem in information processing which results in confusion and at the end they are unable to write, spell, pronounce and speak any one language properly. Apart from learning disability one significant factor contributing to the severity of the learning disability can be learning of more than one language in schools. So the organizations who are involved in developing curriculum for school should keep in mind the age and capacity of a child for learning different languages.

Chapter VIII

CONCLUSION

The study provided evidence suggesting that prevalence rate of specific learning disabilities is high among girls students with accompanying social and emotional difficulties. Out of two hundred girls students seventy five (37%) were diagnosed as suffering from learning disabilities which has proved wrong the prevailing concept that boys are more prone to develop learning disabilities as compared to girls. This further suggest that previous researchers focused on the boys because far more boys than girls have been diagnosed as having reading problem. This was probably because of their status in the society and ignored the prevalence of learning disabilities among girls due gender biased approach.

All learning disabled students showed poor performance on learning disabilities scale but they exhibited severe deficiency in literacy skills which include reading, writing, spelling and verbal fluency which suggests that these areas are highly affected due to learning disabilities.

The strength of relationship between specific learning disabilities and psychological co morbidity is note worthy. It was found that most learning disable girls were having poor self image, anxiety, aggression and depression which can further lead towards maladjustment in school, family and society in general. The risk of developing psychological comorbidities is more double for female child as compared to male child with similar problems because of lack of concern from parents and teachers in particular and society in general.

The present study has contributed to the existing body of knowledge in the field of learning disabilities as little attention has been paid to the analysis of psychological comorbidity associated with learning disabilities among girls.

The findings of this study serve as a first step in exploring prevalence and psychological comorbidity among girls students suffering from specific learning disabilities in Pakistan.

SUGGESTIONS

The study shows that there is high rate of prevalence of learning disabilities among girls which can be one of the major reasons of drop out rate from school which is alarmingly high among girls schools in Pakistan .If the situation still persists and left unaddressed it may result in increase in illiteracy among girls which will further adversely effect the human development index and waste of meager resources.

This study was carried out in urban settings and only girls schools were included in the sample. It would be more enlightening if boys schools in urban/rural settings are explore for comparisons. Further investigations would also shed insights on the extent of the problem and its management in our culture.

Replicating the study in different school settings would add to its reliability and validity.

Findings of this study suggests severe deficiency in literacy skills among girls with learning disability. This may serve as a base line for future researches that aim at developing diagnostic and remedial procedures for learning disabilities.

In order to deal with the problem effectively there should be awareness programmes for parents and teachers so that learning disability can be identified at an early age.

Special institutions needs to be established at national level focusing on development of remedial procedures for specific learning disabilities.

Early diagnosis and intervention in children with learning disabilities makes a substantial improvement in self confidence and social competency which helps them in opening windows of opportunity in school and society.

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Annexures

Annexure A

Screening Check List For Teachers

(پارٹ اول)

برائے مہربانی نیچے دیے ہوئے سوالات کا جواب ہاں/ نہیں میں دیں۔

1۔	کیا بچے کی زبانت نارمل ہے۔	ہاں	نہیں
2۔	کیا بچے کو سننے میں کوئی مسئلہ ہے۔	ہاں	نہیں
3۔	کیا بچے کو نظر اور دیکھنے میں کوئی مسئلہ ہے۔	ہاں	نہیں
4۔	کیا بچے کو کوئی جسمانی مسئلہ ہے۔	ہاں	نہیں
5۔	کیا بچہ سکول میں باقاعدگی کے ساتھ آتا ہے۔	ہاں	نہیں

(پارٹ دوئیم)

کیا بچے کو مندرجہ ذیل میں سے کوئی مسئلہ ہے۔

1۔	پڑھنا	ہاں	نہیں
2۔	جمع کرنا	ہاں	نہیں
3۔	لکھنا	ہاں	نہیں
4۔	حساب (جمع، تفریق، ضرب، تقسیم)	ہاں	نہیں
5۔	پہاڑے	ہاں	نہیں
6۔	لکھائی	ہاں	نہیں
7۔	تلفظ	ہاں	نہیں
8۔	لفظوں میں اظہار کرنا	ہاں	نہیں
9۔	جملے بنانا	ہاں	نہیں
10۔	یادداشت	ہاں	نہیں
11۔	توجہ	ہاں	نہیں
12۔	اشکال کو سمجھنا	ہاں	نہیں
13۔	یاد کرنا دوبارہ ذہن میں لانا	ہاں	نہیں
15۔	بے ربط حرکات کرتا ہے۔	ہاں	نہیں

Annexure B

Learning Disablities Scale

1۔ مختلف چیزوں کی آؤٹ لائن ڈرائنگ بنائیں اور بچے سے ان کا نام پوچھیں (نوٹ کریں کے بچے نے کتنی غلطیاں کیں) جیسے چاند، سورج، درخت، چھتری، کشتی، کپ، گلاس، پھول، بوتل، کتاب۔

2۔ بچے کو دھاگہ اور موتیا دیں اور اس سے کہیں۔ کہ دھاگے میں موتیاں ڈالے۔ (نوٹ کریں کہ Sec میں بچے نے کتنی موتی ڈالے اور اسکی حرکات کیسے تھیں)

3۔ بچے سے کہیں کہ وہ کھڑا ہوجائے اور بازو اُٹھا کر دیکھائے۔ سامنے اور سائیڈ کو (نوٹ کریں کہ یہ حرکات کرتے وقت بچے کا توازن برقرار تھا یا نہیں)۔

4۔ بچے کا ایک منٹ کیلئے مواد کو پڑھنے دیں۔ (نوٹ کریں کے بچے نے کتنی غلطیاں کیں اور کتنے الفاظ صحیح ادا کیے)۔

5۔ دو منٹ Spelling کا Tester.Test ہر لفظ کو پڑھیگا اور بچہ لکھے گا (نوٹ کریں کے بچے نے کتنی غلطیاں کیں اور صحیح الفاظ لکھے)۔

6۔ ایک منٹ کیلئے لکھائی کا Test ۔اس میں بچے کو مواد دیں اور کہیں کہ وہ اسکو Copy کرے۔(نوٹ کریں کے بچے نے غلطیاں اور صحیح جوابات کتنے دیے اسکی لکھائی کیسے تھی)۔

7۔ ایک منٹ میں بچہ کتنے الفاظ بول سکتا ہے۔ (لفظوں کی تعداد اور صحیح و غلط کو نوٹ کریں)۔

8۔ بچے سے کہیں کہ وہ اپنا سیدھا ہاتھ دکھائے (صحیح و غلط نوٹ کریں)۔

9۔ اپنا بایاں کان دکھائے۔

10۔ اپنا سیدھا کان بائیں ہاتھ سے چھوئے۔

11۔ Testerاپنے ہاتھ Table پر رکھے اور پوچھے میرا بایاں ہاتھ کونسا ہے۔

12۔ اپنے بائیں ہاتھ سے سیدھا میرا دایاں کان چھوئیں۔

13۔ اپنے بائیں ہاتھ سے میرا دایاں کان چھوئیں۔

14۔ میرا دایاں ہاتھ اپنے دائیں ہاتھ سے چھوئیں۔

15۔ اپنے دائیں ہاتھ سے میری بائیں آنکھ کی طرف اشارہ کریں۔

16۔ اپنے بائیں ہاتھ سے میرے بائیں کان کی طرف اشارہ کریں۔

17۔ اپنے سیدھے ہاتھ سے میرے بائیں ہاتھ کو چھوئیں۔

18۔ 9 میں سے 2 نکالے تو کتنے رہ گئے۔ جواب سامنے لکھیں۔

19۔ چھ میں سے 3 نکالے تو کتنے رہ گئے۔

20۔ 19 میں سے 7 نکالے تو؟

21 ۔ 24 میں سے 2 نکالے تو؟

22۔ 52 میں سے 9 گئے تو؟

23۔ 44 میں سے 7 گئے تو؟

24۔ 6,7,8 کا پہاڑہ بتائیں۔ اگر یہ نہ بتا سکیں تو 4 کا پہاڑہ دیں۔

25۔ سال کے کتنے مہینے ہیں۔ بتائیں۔

26۔ اب الٹی طرف سے سال کے مہینے بتائیں۔

27۔ ان حروف کو میرے پڑھنے کے بعد بولیں۔

832

4516

79243

831945

3716374

942657163

387

8432

65412

846732

94128219

63871963,169475396

28۔ ان ہندسوں کو میرے بولنے کے بعد الٹا کر کے بولیں۔

471	293
4684	7539
37149	15273
931678	62783

29۔ بچے سے کہیں کہ وہ Square Circle Rectangle, Triangle بنائے اور نام بھی لکھے۔

30۔ بچے سے کہیں کہ وہ اپنا نام لکھے (نام لکھتے وقت بچے کے پنسل کے طریقے کو دیکھیں)۔

31۔ بچے کی اردو کی کتاب سے دس (10) الفاظ کا انتخاب کریں اور بچے سے کہیں کہ وہ انکو پڑھے۔ (بچے کے تلفظ کو نوٹ کریں)۔

32۔ ڈاٹ کمپلی ۔ نیچے دی ہوئی اشکال میں لکھے ہوئے ہندسے خالی اشکال کے نیچے لکھیں۔

Digit	1	2	3	4	5	6	7	8	0
Symbol	0	△	□	⊃	×	=	+	>	-

3	1	2	5	6	9	8	2	3	8	7	9	6	4	3	9	2	4	5	7	8	3

5	2	1	7	6	4	5	2	1	4	3	9	6	8	7	5	3	1	4	7	8	2

Annexure C

Answer Sheet for

COLOURED PROGRESSIVE MATRICES (1938)

J.C. RAVEN

SETS A, B, C, D, AND E

Name ..... Sex ..... Age .....

School ..... Grade .....

Test Begun ..... Test Ended ..... Total Time .....

A		AB		B	
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
10		10		10	
11		11		11	
12		12		12	

Total Score ..... Percentile .....

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Annexure D

KOPPITZ EMOTIONAL INDICATORS OF HTP

(VALID FOR AGES 5 TO 12 UNLESS OTHERWISE INDICATED)

	Present
1. Poor Integration of parts of figure (B-7, G-6)	
2. Shading of face	
3. Shading of body or limbs (B9, G8)	
4. Shading of hands or neck (B8, G7)	
5. Gross Asymmetry of limbs	
6. Slanting figure, axis of figure tilted by 15° or more	
7. Tiny figure, 2" high or less	
8. Big figure, 9" high or more (B9 & G-8)	
9. Transparencies	
10. Tiny Head, less than 1/10th of total figure	
11. Crossed eyes, eyes both turned in or out	
12. Teeth	
13. Short arms, not long enough to reach waistline	
14. Long arms, long enough to reach knecline	
15. Arms clinging to sides of body	
16. Big hands, as large as face	
17. Hands cut off, arms without hands or fingers	
18. Legs pressed together	
19. Genitals	
20. Monster or grotesgue figure	
21. Three or more figures	
22. Clouds, rain, snow	
23. No eyes	
24. No nose (B6, G5)	
25. No mouth	
26. No body	
27. No arms (B6, G5)	
28. No legs	
29. No feet (B9, G7)	
30. No Neck (B10, G9)	

Annexure E

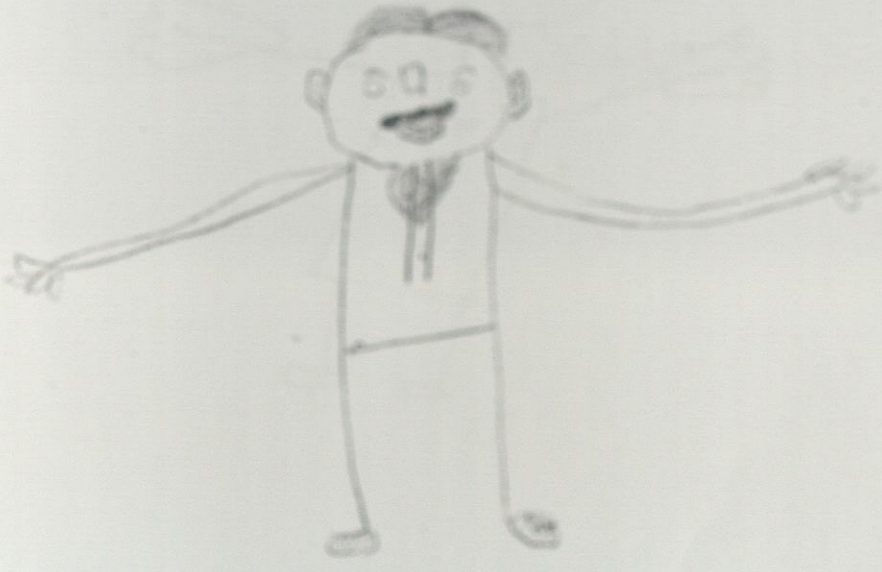
PERSONAL INFORMATION SHEET

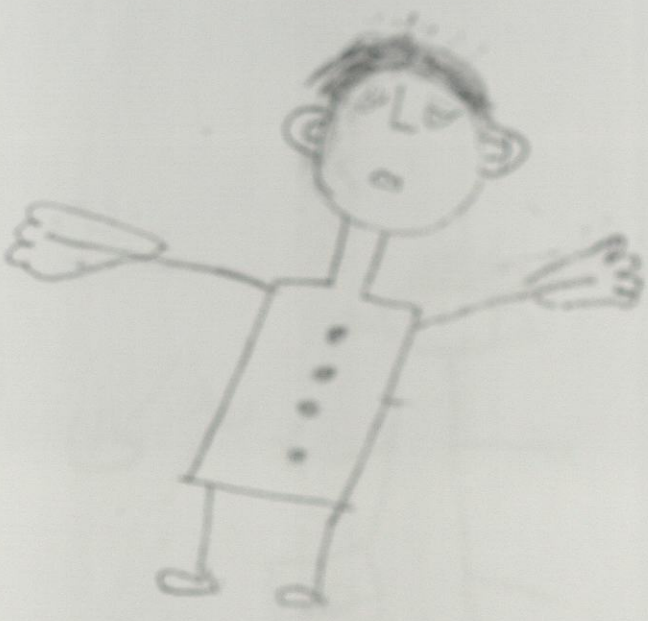
Name _____ Age _____ Class _____

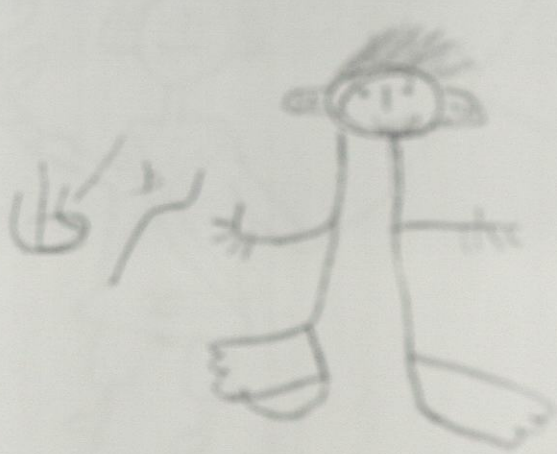
Section _____ Father Name _____

School _____

HUMAN FIGURE DRAWINGS OF LEARNING DISABLE GIRLS






لڑکی

HUMAN FIGURE DRAWINGS OF NON DISABLE GIRLS

WRITINGS OF LEARNING DISABLE GIRLS

حضرت محمد

رسول کے اخلاق

حضرت محمد ﷺ اس دنیا میں تشریف لائے۔ تو اس وقت
کے حالات اس سے بالکل مختلف تھے۔ عرب کی حالت تو سب
سے زیادہ بری تھی۔ ہر طرف ظلم تھے۔ ہر کاروبار گھر کا حال
کا فقدان تھا

دیانتدار۔ سچائی۔ خوش خلق۔ ایماندار۔ احترام۔ زندگی
کے لوگ۔ حضرت محمد

عرضِ ہنر

بنی کریم ﷺ کی زندگی ساری کاوشگو

آپ ہاتھ سمرمیل کاو صلو ناکرن

رسُول کھرا

نا (

انہیں کہ آپ کی زندگی ساری خاموشی

آپ ہاں کو میل ملاپ مسلو نا کرتے

(نقطہ نظر

① دیباچہ۔ خلاصہ۔ زدو۔

0 Learning disorders
N disabilities
(2) (3) Social psychology

0 Learning disorders
N disabilities
(2) (3) Social psychology

0 Learning disorders
N disabilities
(2) (3) Social psychology

0 Learning disorders
N disabilities
(2) (3) Social psychology

0 Learning disorders
N disabilities
(2) (3) Social psychology