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: TITLE :

DEVELOPMENT OF A SCREENING TEST TO ASSESS LEARNING DISABILITY BY TEACHERS & PARENTS

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Amongst all the school going children, approximately 15% are found to have some learning disability. In many countries, government has made some arrangements for their screening and remedial education. In a linguistically diverse country like India, it has proven to be a difficult task.

Ever since I started working in this field, which was in 1999-2000, I had believed that there should be a screening test to recognize and filter these children who might need extra help.

In my city, Surat I found people who were willing to do the required hard work in this field. Along with Pediatrician Dr. Ketan Bharadwa, I started the efforts, basic frameworks were laid but the work came to halt due to lack of the financial support. Meanwhile, in 2007, I had a meeting with the Director of G.C.E.R.T. Dr. Nalin Pandit and I found some rays of hope that the work that was left will finally be complete. So much work mainly regarding the increasing public awareness and information spreading was done. But after his retirement, it again stopped.

But due to the firm resolve that I want to make a screening tool, I proposed a Major Research Project and it was accepted. After the permission in October, 2015, first installment arrived in December, 2015. We started work in February, 2016. All the grunt work almost got over

by April-2018. I was able to accomplish such a task only because I got support from numerous people.

I acknowledge the support and constantly telling us to complete our work and who has always been there, Dr. Ketan Bharadwa, A constant source of inspiration Dr. Nalin Pandit, and my research fellow Virang Bhatt.

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After the test was prepared, it was sent to various schools to be filled by students. I also thank Dr. Apurva Desai and Rohit Gor of M.C.A. Department of Veer Narmad South Gujarat University. Schools of Surat city like, J. H. Ambani, VanitaVishram, G .J. Zadafiya and L. P. Savani and their trusties, professional and teachers who cooperated with us and helped us to fill the tests.

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Place : Surat

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CHAPTER : 1

INTRODUCTION

Introduction :

The Constitution (Eighty-sixth Amendment) Act, 2002 inserted Article 21-A in the Constitution of India to provide free and compulsory education to all children in the age group of six to fourteen years as a Fundamental Right in such a manner as the State may, by law, determine. The Right of Children to Free and Compulsory Education (RTE) Act, 2009, which represents the consequential legislation envisaged under Article 21-A, means that every child has a right to full time elementary education of satisfactory and equitable quality in a formal school which satisfies certain essential norms and standards.

Article 21-A and the RTE Act came into effect on 1 April 2010. The title of the RTE Act incorporates the words 'free and compulsory'.

'Free education' means that no child, other than a child who has been admitted by his or her parents to a school which is not supported by the appropriate Government, shall be liable to pay any kind of fee or charges or expenses which may prevent him or her from pursuing and completing elementary education.

'Compulsory education' casts an obligation on the appropriate Government and local authorities to provide and ensure admission, attendance and completion of elementary education by all children in the

6-14 age groups. With this, India has moved forward to a rights based framework that casts a legal obligation on the Central and State Governments to implement this fundamental child right as enshrined in the Article 21A of the Constitution, in accordance with the provisions of the RTE Act.

The RTE Act provides for the :

- Right of children to free and compulsory education till completion of elementary education in a neighborhood school.
- It clarifies that 'compulsory education' means obligation of the appropriate government to provide free elementary education and ensure compulsory admission, attendance and completion of elementary education to every child in the six to fourteen age group. 'Free' means that no child shall be liable to pay any kind of fee or charges or expenses which may prevent him or her from pursuing and completing elementary education.
- It makes provisions for a non-admitted child to be admitted to an age appropriate class.
- It specifies the duties and responsibilities of appropriate Governments, local authority and parents in providing free and compulsory education, and sharing of financial and other responsibilities between the Central and State Governments.

- It lays down the norms and standards relating inter alia to Pupil Teacher Ratios (PTRs), buildings and infrastructure, school-working days, teacher-working hours.

- It provides for rational deployment of teachers by ensuring that the specified pupil teacher ratio is maintained for each school, rather than just as an average for the State or District or Block, thus ensuring that there is no urban-rural imbalance in teacher postings. It also provides for prohibition of deployment of teachers for non-educational work, other than decennial census, elections to local authority, state legislatures and parliament, and disaster relief.

- It provides for appointment of appropriately trained teachers, i.e. teachers with the requisite entry and academic qualifications.

- It prohibits (a) physical punishment and mental harassment; (b) screening procedures for admission of children; (c) capitation fee; (d) private tuition by teachers and (e) running of schools without recognition,

- It provides for development of curriculum in consonance with the values enshrined in the Constitution, and which would ensure the all-round development of the child, building on the child's knowledge, potentiality and talent and making the child free of fear, trauma and anxiety through a system of child friendly and child centered learning.

In a democratic country like India, every child has the right to education – the right to receive help in learning to the limits of his capacity, whether the capacity is small or great. It is consistent with a democratic philosophy that all children are given equal opportunity to learn whether they are average, bright, dull, retarded, blind, deaf, crippled, delinquent, emotionally disturbed or otherwise limited or deviant in their capacities to learn. Equality of opportunity denotes two things- equality of access to school education and equality of success in school.

In every classroom there are some children who have some learning problems. They need a little extra help from teachers to learn. These children can be label out with the "learning disability or disorder". Sometimes teachers understand their problems, while at other times teachers are not able to understand their problem. So, the help they provide may not be sufficient. Their learning problems may persist and even accumulate despite special help by teachers. If teachers cannot understand the special needs of such children they will experience failure and frustration and later drop out from the school. In fact our failure to understand the special needs of such children have been major factors for our failure to reach the target of universalization of elementary education within the stipulated period.

LD is more than a 'difference' or 'difficulty' with learning. Learning disabilities are problems that affect the brain`s ability to receive process, analyze, or store information. These problems can make

it difficult for a student to learn as quickly as someone who isn`t affected by learning disabilities. Learning disability doesn`t have anything to do with a person's intelligence — after all, successful people such as Walt Disney, Alexander Graham Bell, and Winston Churchill all had learning disabilities.

The way our brains process information is extremely complex — it's no wonder things can get messed up sometimes. Take the simple act of looking at a picture, for example : Our brains not only have to form the lines into an image, they also have to recognize what the image stands for, relate that image to other facts stored in our memories, and then store this new information. Many of these activities take place in separate parts of the brain, and it`s up to our minds to link them all together. Children with learning disabilities are not "dumb" or "lazy." In fact, they usually have average or above average intelligence. Their brains just process information differently.

Historical Perspective :

"No other disabling condition affects so many people and yet has such a low public profile and low level of understanding as LD",

Washington Summit 1994 (Reid L, et al., 1994)

Morgan, a general practitioner in Sussex, England, published the first case of what is now known as dyslexia, a word derived from the

Latin word “dys”, which translates to ‘difficult’, and the Greek word “lexia”, which translates to ‘words’; it literally means, “difficulty with words”.

On 7th November, 1896. Morgan wrote in the British Medical Journal, about Percy F., a 14-year old, who was intelligent, bright, quick with learning games, and the intellectual equal of his peers, but fell behind, in his inability to learn how to read.

Today, as in 1896, most people associate intelligence with the ability to read, but Percy F. and the experience of millions of people with dyslexia breaks down the relationship between reading and intelligence. Researchers were left with the question, “What causes dyslexia if intelligence is not the marker?” (Snowling MJ, 1996).

Morgan and Hinshelwood, an ophthalmologist also writing at the turn of the Century, speculated that such difficulties with reading and writing were due to “congenital word blindness”, and for many years, the dominant view was that dyslexia was caused by visual processing deficiencies. There is still interest in the role of visual factors in the etiology of dyslexia, especially in low level impairments of the visual system. However, the most widely accepted view today is that dyslexia is a verbal deficit and can be considered part of the continuum of language disorders. Indeed, converging evidence supports a specific theory, that dyslexic readers have phonological (speech) processing deficits (Snowling MJ, 1996).

The identification and description of Learning Disabilities as being deficient general learning processes centering mostly on what we today call distractibility, hyperactivity and visual-perceptual and perceptual-motor problems began in the Western world in the 1950s and 1960s (The Nalanda Institute, 2002).

The major developments of the LD movement during this period centered on children who appeared normal in many intellectual skills, but who also displayed a variety of cognitive limitations that seemed to interfere with their ability to read, write and learn in the classroom. LD was seen primarily as a processing disorder with difficulty in cross-modal integration (Karanth, 2002).

Dyslexia at this stage was a term coined to describe right brained thinkers who have difficulty in reading, think in pictures and are very imaginative and multidimensional (Eklavya School). Famous personalities, Walt Disney and Albert Einstein were cited as examples.

It was a unanimous thought even at this time that these children needed to be accommodated in the mainstream class and rather than expecting them to mould themselves to the system, the system needed to become flexible to adapt to their needs. Gardner's theory (1983) of Multiple Intelligences talked of different ways to teach these children. In addition, detailed assessments in various processing areas such as auditory or visual sequencing, auditory/ visual memory and discrimination (which are still included in most test batteries for LD)

resulted in specific remedial measures to deal with a deficient processing pathway.

The 1980s, however, witnessed a renewed emphasis on the association of language disturbances with Learning Disabilities (Karanth, 2002). Today it is accepted that LD is a language based disorder.

In the years following the report on the first case of dyslexia, different types of specific learning disabilities were defined : dyslexia (difficulty in reading), dysgraphia (difficulty in writing), dyscalculia (difficulty in numbers and mathematical concepts) and dysnomia (difficulty in naming). Simultaneously dysphasia (expressive language difficulty) was also being noted together with receptive language difficulties (Karanth, 2002).

Today all these are included under the umbrella of Specific Learning Disability (SLD). Hence using the word dyslexia interchangeably with LD is technically incorrect.

It is important to remember that a Specific Learning Disability, as the name suggests, includes difficulties in specific processing areas as opposed to global difficulties in children with compromised intelligence (Karanth, 2002).

The LD movement in India is of more recent origin and comparable today with that of the western LD movement of nearly half a century ago.

In the eastern world, LD was earlier considered a problem of English speaking countries. The apparent lower incidence of these types of difficulties resulted in a relative lack of concern about LD in Asian countries such as India and China. Reports of lower incidences of LD in the eastern world were attributed by Western scholars to the general lack of awareness and sensitivity among educationists. The specific difficulties faced by children learning to read were attributed to the overcrowded classrooms. At the same time, reports of the high incidence of problems associated with the acquisition of reading in Western countries was attributed by easterners to the vagaries and complex nature of alphabetic writing systems such as English (Karanth, 2002).

During the last decade or two, however, there has been an increasing awareness and identification of children with LD in India. Despite this growing interest, we still have no clear idea about the incidence and prevalence of LD in India.

Epidemiological studies of LD are fraught with difficulties ranging from the very definition of LD, identification and assessment, to socio-cultural factors unique to India. The inherent complexities of the notion of LD are further complicated by an acute lack of teacher awareness, of clear-cut assessment procedures or indigenous tools for assessment of processing deficits, intelligence testing and testing for proficiency in reading and writing (Karanth, 2002).

The Situation in India :

At present, in India, LD is considered the prerogative of a few in the big cities. Even Directors of State Education are known to express doubts at the existence of any such disability. Unfortunately, the confounding factors of English as a foreign language and lack of proper education and exposure whilst aggravating the academic difficulties for the children, also play a major part in masking the processing problems and hence make LD an elusive entity. Teachers attribute the learning difficulties to a "language problem", not realizing that LD too is a language based disorder.

Most of the (research and intervention) work in the area of LD is being done by private organizations and the NGOs. There is little communication between these organizations and the state educational authorities. Adding further to the problems, there is a divide between the personnel in the health and the educational fields, be they private or government.

LD as all other developmental problems is both a health and an educational issue, but regrettably, the meeting point between the two is few and far between.

The multilingual social context in India, where children often have to learn to study through a medium other than their mother tongue is a complexity that makes not only diagnosis extremely difficult but also, estimation of prevalence next to impossible.

The language issue is further compounded by factors such as age of enrolment in school, pre-school exposure and literacy support available in their respective homes during the school years. Consequently, relating "adequate instruction" and "social opportunity" as is required by definition of LD to children from varied backgrounds (from an urban child enrolled in pre-school at age 2½ years with early and sustained support to a rural child attending school for the first time at age 6½ years with no additional literacy support of any kind is a tremendous challenge (Karanth, 2002).

If this is true of identification and assessment, the challenges faced with respect to remediation and management are no less daunting. Our educational system with its overwhelming emphasis on knowing rather than learning, theory rather than application, is ill-suited for the child with LD. The overwhelming influence of Western thought with lack of indigenous research has led to a situation where even ones strengths are turned into liabilities, an example being the 'phonemecisation' of the Indian scripts under the influence of the phonic method of the West.

The near total lack of alternate systems of education and the social premium for a handful of vocational courses with an utter disregard for all other vocational training are other major hurdles in the 'education' of the child with LD. These are but some of the issues faced by the individual and the family of the learning disabled, to date in India (Karanth, 2002).

An epidemiological study (1995-2000) of child and adolescent psychiatric disorders in urban and rural areas of Bangalore, was done by the Dept of Psychiatry, Epidemiology and Biostatistics, National Institute of Mental Health and Neuro Sciences, Bangalore to determine prevalence rates of child and adolescence psychiatric disorders for the Indian Council of Medical Research. The total prevalence rate in 4-16 year old children in urban middle class, slum and rural areas was 12%. However the children with LD were eventually excluded from this study as most of them lacked adequate schooling as per the ICD-10-DCR criteria for LD. In addition, many of the assessments were incomplete due to lack of cooperation for the lengthy testing for Specific Learning Disabilities (Srinath S, et al., 2005).

The prevalence study on Learning Disability conducted at the L.T.M.G. Hospital, Sion, Mumbai reveals that of the total number of 2,225 children visiting the hospital for certification of any kind of disability, 640 were diagnosed as having a Specific Learning Disability. These children came from the lower, middle and upper middle socio-economic strata of society. Referral was due to their poor school performance (LTMG, 2006).

Studies conducted by the SreeChithiraThirunal Institute of Medical Sciences and Technology in Kerala in 1997 revealed that nearly 10% of the childhood population has developmental language disorders of one type or the other and 8-10% of the school population has learning disability of one form or the other.

The Institute for Communicative and Cognitive Neurosciences (ICCONS), Kerala, had done research programs in child language disorders and developing research and rehabilitation programs for learning disabilities. Screening for LDs for Classes I to VII in schools with follow up assessments by experts in 10 panchayats in Kerala revealed that 16% of these school children have a learning disability (Suresh, 1998).

Other studies have been done at child-guidance clinics in India (John and Kapur, 1986) where 20% children attending the clinic were diagnosed to be scholastically backward.

Classification :

According to Diagnostics and Statistics Manual (DSM) – 5

Learning disabilities are called, **Specific Learning Disorders.**

Their diagnostic criteria's are as following :

[A] Difficulties learning and using academic skills, as indicated by the presence of at least one of the following symptoms that have persisted for at least 6 months, despite the provision of interventions that target those difficulties :

Inaccurate or slow and effortful word reading (e.g., reads single words aloud incorrectly or slowly and hesitantly, frequently guesses words, has difficulty sounding out words).

Difficulty understanding the meaning of what is read (e.g., may read text accurately but not understand the sequence, relationships, inferences, or deeper meanings of what is read).

Difficulties with spelling (e.g., may add, omit, or substitute vowels or consonants).

Difficulties with written expression (e.g., makes multiple grammatical or punctuation errors within sentences; employs poor paragraph organization; written expression of ideas lacks clarity).

Difficulties mastering number sense, number facts, or calculation (e.g., has poor understanding of numbers, their magnitude, and relationships; counts on fingers to add single-digit numbers instead of recalling the math fact as peers do; gets lost in the midst of arithmetic computation and may switch procedures).

Difficulties with mathematical reasoning (e.g., has severe difficulty applying mathematical concepts, facts, or procedures to solve quantitative problems).

[**B]** The affected academic skills are substantially and quantifiably below those expected for the individual's chronological age, and cause significant interference with academic or occupational performance, or with activities of daily living, as confirmed by individually administered standardized achievement measures and comprehensive clinical assessment. For individuals age 17

years and older, a documented history of impairing learning difficulties may be substituted for the standardized assessment.

[**C]** The learning difficulties begin during school-age years but may not become fully manifest until the demands for those affected academic skills exceed the individual's limited capacities (e.g., as in timed tests, reading or writing lengthy complex reports for a tight deadline, excessively heavy academic loads).

[**D]** The learning difficulties are not better accounted for by intellectual disabilities, uncorrected visual or auditory acuity, other mental or neurological disorders, psychosocial adversity, lack of proficiency in the language of academic instruction, or inadequate educational instruction.

These four diagnostic criteria are to be met based on a clinical synthesis of the individual's history (developmental, medical, family, educational), school reports, and psycho - educational assessment.

There are several types Of learning disabilities commonly found in students, such as, Dyslexia, dysgraphia, dyscalculia etc.

Dyslexia is an alternative term used to refer to a pattern of learning difficulties characterized by problems with accurate or fluent word recognition, poor decoding, and poor spelling abilities. If dyslexia is used to specify this particular pattern of difficulties, it is important also to specify any additional difficulties that are present, such as difficulties with reading comprehension or math reasoning.

Dysgraphia is a childhood disorder that results in impaired handwriting, impaired spelling, or both in a child of normal intelligence. It is not a mental health disorder, but rather a learning disability marked by difficulty expressing thoughts and ideas in writing. Dysgraphia is frustrating for the child and can cause great emotional difficulty and distress. A child with dysgraphia may have trouble learning to spell written words, and also have trouble writing at a normal speed, but will not necessarily have problems reading or speaking. Dysgraphia can occur on its own or with dyslexia, which is an impaired ability to read and comprehend written words, or with other selective language impairments that cause problems with learning written and oral language skills.

Dyscalculia is an alternative term used to refer to a pattern of difficulties characterized by problems processing numerical information, learning arithmetic facts, and performing accurate or fluent calculations. If dyscalculia is used to specify this particular pattern of mathematic difficulties, it is important also to specify any additional difficulties that are present, such as difficulties with math reasoning or word reasoning accuracy.

The current severity can be differentiated in three following levels :

Mild : Some difficulties learning skills in one or two academic domains, but of mild enough severity that the individual may be able to

compensate or function well when provided with appropriate accommodations or support services, especially during the school years.

Moderate : Marked difficulties learning skills in one or more academic domains, so that the individual is unlikely to become proficient without some intervals of intensive and specialized teaching during the school years. Some accommodations or supportive services at least part of the day at school, in the workplace, or at home may be needed to complete activities accurately and efficiently.

Severe : Severe difficulties learning skills, affecting several academic domains, so that the individual is unlikely to learn those skills without ongoing intensive individualized and specialized teaching for most of the school years. Even with an array of appropriate accommodations or services at home, at school, or in the workplace, the individual may not be able to complete all activities efficiently.

Old classification :

The revised version of the **DSM-IV (DSM-IV-TR)** includes four diagnostic categories of learning disorders : reading disorder, mathematics disorder, disorder of written expression, and learning disorder not otherwise specified.

Reading Disorder :

Reading disorders are present in approximately 75 percent of children and adolescents with learning disorders. Students who have learning problems in other academic areas most commonly experience difficulties with reading as well. Reading disorder is defined as reading achievement below the expected level for a child`s age, education, and intelligence, with the impairment interfering significantly with academic successor the daily activities that involve reading. Reading disorder is characterized by an impaired ability to recognize words, slow and inaccurate reading, and poor comprehension.

Historically, many different labels have been used to describe reading disabilities, including word blindness, reading backward, learning disability, alexia, and developmental word blindness. The term developmental alexia was accepted and defined as a developmental deficit in the recognition of printed symbols. This term was simplified by adopting the term dyslexia in the 1960s. Dyslexia was used extensively for many years to describe a reading disability syndrome that often included speech and language deficits and right-left confusion.

Mathematics Disorder :

Children with mathematics disorder have difficulty learning and remembering numerals, cannot remember basic facts about numbers, and are slow and inaccurate in computation. Poor achievements in four groups of skills have been identified in mathematics disorder : linguistic

skills (those related to understanding mathematical terms and converting written problems into mathematical symbols), perceptual skills (the ability to recognize and understand symbols and order clusters of numbers), mathematical skills (basic addition, subtraction, multiplication, division, and following sequencing of basic operations), and attention skills(copying figures correctly and observing operational symbols correctly). A variety of terms over the years, including dyscalculia, congenital arithmetic disorder, acicula, Gerstmann syndrome, and developmental arithmetic disorder have been used to denote the difficulties present in mathematics disorder. Mathematics disorder can occur in isolation or in conjunction with language and reading disorders.

Disorder of Written Expression :

Written expression is the most complex skill acquired to convey an understanding of language and to express thoughts and ideas. Writing skills are highly correlated with reading for most children; for some children, however, reading comprehension may far surpass their ability to express complex thoughts. Written expression in some cases is a sensitive index of more subtle, although impairing, deficits in language usage that typically are not detected by standardized reading and language tests.

Disorder of written expression is characterized by writing skills that are significantly below the expected level for a child`s age and intellectual capacity. These difficulties impair the child`s academic

performance and writing in everyday life. The many components of writing disorder include poor spelling, errors in grammar and punctuation, and poor handwriting. Spelling errors are among the most common difficulties for a child with a writing disorder. Spelling mistakes are most often phonetic errors; that is, an erroneous spelling that sounds like the correct spelling. Examples of common types of spelling errors are fone for phone, or beleeve for believe.

(From American Psychiatric Association.*Diagnostic and Statistical Manual of Mental Disorders*. 4th ed. Text rev. Washington, DC : American Psychiatric Association; copyright 2000)

What are the signs of a learning disability ?

There is no one sign that shows a person has a learning disability. Experts look for a noticeable difference between how well a child does in school and how well he or she could do, given his or her intelligence or ability. There are also certain clues that may mean a child has a learning disability. We`ve listed a few below. Most relate to elementary school tasks, because learning disabilities tend to be identified in elementary school. A child probably won`t show all of these signs, or even most of them. However, if a child shows a number of these problems, then parents and the teacher should consider the possibility that the child has a learning disability.

When a child has a learning disability, he or she : may have trouble learning the alphabet, rhyming words, or connecting letters to their sounds;

- may make many mistakes when reading aloud, and repeat and pause often;
- may not understand what he or she reads;
- may have real trouble with spelling;
- may have very messy handwriting or hold a pencil awkwardly;
- may struggle to express ideas in writing;
- may learn language late and have a limited vocabulary;
- may have trouble remembering the sounds that letters make or hearing slight differences between words;
- may have trouble understanding jokes, comic strips, and sarcasm;
- may have trouble following directions;
- may mispronounce words or use a wrong word that sounds similar;
- may have trouble organizing what he or she wants to say or not be able to think of the word he or she needs for writing or conversation;
- may not follow the social rules of conversation, such as taking turns, and
- may stand too close to the listener;

- may confuse math symbols and misread numbers;
- may not be able to retell a story in order (what happened first, second, third); or
- may not know where to begin a task or how to go on from there.

If a child has unexpected problems learning to read, write, listen, speak, or do math, then teachers and parents may want to investigate more. The same is true if the child is struggling to do any one of these skills. The child may need to be evaluated to see if he or she has a learning disability.

Prevalence :

The prevalence of specific learning disorder across the academic domains of reading, writing, and mathematics is 5%-15% among school-age children across different languages and cultures. Prevalence in adults is unknown but appears to be approximately 4%. International status

Learning disorders affect at least 5 percent of school-age children. This represents approximately half of all public school children who receive special education services in the United States. In 1975, Public Law 94-142 (the Education for All Handicapped Children Act) mandated all states to provide free and appropriate educational services to all children. Since that time, the number of children identified with learning disorders has increased. It is estimated that 2% of the population - or 33,000 people in Northern Irelandhave a learning

disability. This gives a prevalence rate of 9.7 persons per1,000 populations (Sept 2003).In the UK, 1.5 million people nearly 3 in 100 have some form of learning disability. About a third of a million young people in the UK have a learning disability. Of those, nearly 40% are likely to developa mental health problem. Males are more likely than females to have both severe learning disabilities (average ratio 1:2 male : 1 female and mild learning disability (average ratio 1:6 males : 1 female).Mild learning disabilities are more common among boys/ men, young people, people who are poorer and people from adverse family backgrounds.

National Status :

Very few peoples are aware with learning disability in India. There is no particular statistics available regarding the prevalence in India. Approximately 10% of children are estimated to have Learning disability, out of which 4.6% school going students are identified as severely learning disabled. The fact is that boys show high risk of learning disability than girls. There is no exact data on the number of children requiring support in education in India as most of them are accepted in general stream. Unpublished data in Surat city shows16% of school going children suffers from learning disability.

Development and Course :

Onset, recognition, and diagnosis of specific learning disorder usually occurs during the elementary school years when children are

required to learn to read, spell, write, and learn mathematics. However, precursors such as language delays or deficits, difficulties in rhyming or counting, or difficulties with fine motor skills required for writing commonly occur in early childhood before the start of formal schooling. Manifestations may be behavioral (e.g., a reluctance to engage in learning; oppositional behavior). Specific learning disorder is lifelong, but the course and clinical expression are variable, in part depending on the interactions among the task demands of the environment, the range and severity of the individual's learning difficulties, the individual's learning abilities, comorbidity, and the available support systems and intervention. Nonetheless, problems with reading fluency and comprehension, spelling, written expression, and numeracy skills in everyday life typically persist into adulthood.

Changes in manifestation of symptoms occur with age, so that an individual may have a persistent or shifting array of learning difficulties across the lifespan.

Examples of symptoms that may be observed among preschool-age children include a lack of interest in playing games with language sounds (e.g., repetition, rhyming), and they may have trouble learning nursery rhymes. Preschool children with specific learning disorder may frequently use baby talk, mispronounce words, and have trouble remembering names of letters, numbers, or days of the week. They may fail to recognize letters in their own names and have trouble learning to count. Kindergarten-age children with specific learning disorder may be

unable to recognize and write letters, may be unable to write their own names, or may use Invented spelling. They may have trouble breaking down spoken words into syllables (e.g., "cowboy" into "cow" and "boy") and trouble recognizing words that rhyme (e.g., cat, bat, hat).

Kindergarten-age children also may have trouble connecting letters with their sounds (e.g., letter “b” makes the sound “b”) and may be unable to recognize phonemes (e.g., do not know which in a set of words [e.g., dog, man, car] starts with the same sound as "cat"). Specific learning disorder in elementary school-age children typically manifests as marked difficulty learning letter-sound correspondence (particularly in English-speaking children), fluent word decoding, spelling, or math facts; reading aloud is slow, inaccurate, and effortful, and some children struggle to understand the magnitude that a spoken or written number represents. Children in primary grades (grades 1-3) may continue to have problems recognizing and manipulating phonemes, be unable to read common one-syllable words (such as mat or top), and be unable recognize common irregularly spelled words (e.g., said, two). They may commit reading errors that indicate problems in connecting sounds and letters (e.g., "big" for "got") and have difficulty sequencing numbers and letters. Children in grades 1-3 also may have difficulty remembering number facts or arithmetic procedures for adding, subtracting, and so forth, and may complain that reading or arithmetic is hard and avoid doing it.

Children with specific learning disorder in the middle grades (grades 4-6) may mispronounce or skip parts of long, multi syllable words (e.g., say "conible" for "convertible," "aminal" for "animal") and confuse words that sound alike (e.g., "tornado" for "volcano"). They may have trouble remembering dates, names, and telephone numbers and may have trouble completing homework or tests on time. Children in the middle grades also may have poor comprehension with or without slow, effortful, and inaccurate reading, and they may have trouble reading small function words (e.g., that, the, an, in). They may have very poor spelling and poor written work. They may get the first part of a word correctly, then guess wildly (e.g., read "clover" as "clock"), and may express fear of reading aloud or refuse to read aloud.

By contrast, adolescents may have mastered word decoding, but reading remains slow and effortful, and they are likely to show marked problems in reading comprehension and written expression (including poor spelling) and poor mastery of math facts or mathematical problem solving. During adolescence and into adulthood, individuals with specific learning disorder may continue to make numerous spelling mistakes and read single words and connected text slowly and with much effort, with trouble pronouncing multisyllable words. They may frequently need to reread material to understand or get the main point and have trouble making inferences from written text. Adolescents and adults may avoid activities that demand reading or arithmetic (reading for pleasure, reading instructions).

Adults with specific learning disorder have ongoing spelling problems, *slow* and effortful reading, or problems making important inferences from numerical information in work-related written documents. They may avoid both leisure and work-related activities that demand reading or writing or use alternative approaches to access print (e.g., text-to-speech/speech-to-text software, audiobooks, audiovisual media). An alternative clinical expression is that of circumscribed learning difficulties that persist across the lifespan, such as an inability to master the basic sense of number (e.g., to know which of a pair of numbers or dots represents the larger magnitude), or lack of proficiency in word identification or spelling. Avoidance of or reluctance to engage in activities requiring academic skills is common in children, adolescents, and adults. Episodes of severe anxiety or anxiety disorders, including somatic complaints or panic attacks, are common across the lifespan and accompany both the circumscribed and the broader expression of learning difficulties.

Risk and Prognostic Factors :

Environmental :

Prematurity or very low birth weight increases the risk for specific learning disorder, as does prenatal exposure to nicotine.

Genetic and physiological :

Specific learning disorder appears to aggregate in families, particularly when affecting reading, mathematics, and spelling. The

relative risk of specific learning disorder in reading or mathematics is substantially higher (e.g., 4-8 times and 5-10 times higher, respectively) in first-degree relatives of individuals with these learning difficulties compared with those without them. Family history of reading difficulties (dyslexia) and parental literacy skills predict literacy problems or specific learning disorder in offspring, indicating the combined role of genetic and environmental factors. There is high heritability for both reading ability and reading disability in alphabetic and non-alphabetic languages, including high heritability for most manifestations of learning abilities and disabilities (e.g., heritability estimate values greater than 0.6). Co-variation between various manifestations of learning difficulties is high, suggesting that genes related to one presentation are highly correlated with genes related to another manifestation.

Course modifiers :

Marked problems with inattentive behavior in preschool years are predictive of later difficulties in reading and mathematics (but not necessarily specific learning disorder) and nonresponse to effective academic interventions. Delay or disorders in speech or language, or impaired cognitive processing (e.g., phonological awareness, working memory, rapid serial naming) in preschool years, predicts later specific learning disorder in reading and written expression. Comorbidity with ADHD is predictive of worse mental health outcome than that associated with specific learning disorder without ADHD. Systematic, intensive, individualized instruction, using evidence-based interventions, may

improve or ameliorate the learning difficulties in some individuals or promote the use of compensatory strategies in others, thereby mitigating the otherwise poor outcomes.

Culture-Related Diagnostic issues :

Specific learning disorder occurs across languages, cultures, races, and socioeconomic conditions but may vary in its manifestation according to the nature of the spoken and written symbol systems and cultural and educational practices. For example, the cognitive processing requirements of reading and of working with numbers vary greatly across orthographies. In the English language, the observable hallmark clinical symptom of difficulties learning to read is inaccurate and slow reading of single words; in other alphabetic languages that have more direct mapping between sounds and letters (e.g., Spanish, German) and in non-alphabetic languages (e.g., Chinese, Japanese), the hallmark feature is slow but accurate reading. In English-language learners, assessment should include consideration of whether the source of reading difficulties is a limited proficiency with English or a specific learning disorder. Risk factors for specific learning disorder in English language learners include a family history of specific learning disorder or language delay in the native language, as well as learning difficulties in English and failure to catch up with peers. If there is suspicion of cultural or language differences (e.g., as in an English language learner), the assessment needs to take into account the individual's language proficiency in his or her first or native language as well as in the second

language (in this example, English). Also, assessment should consider the linguistic and cultural context in which the individual is living, as well as his or her educational and learning history in the Original culture and language.

Gender-Related Diagnostic issues :

Specific learning disorder is more common in males than in females (ratios range from about 2:1 to 3:1) and cannot be attributed to factors such as ascertainment bias, definitional or measurement variation, language, race, or socioeconomic status.

Functional Consequences of Specific Learning Disorder :

Specific learning disorder can have negative functional consequences across the lifespan, including lower academic attainment, higher rates of high school dropout, lower rates of postsecondary education, high levels of psychological distress and poorer overall mental health, higher rates of unemployment and underemployment, and lower incomes. School dropout and co-occurring depressive symptoms increase the risk for poor mental health outcomes, including tendency of committing suicide, whereas high levels of social or emotional support predict better mental health outcomes.

Differential Diagnosis :

Normal variations in academic attainment :

Specific learning disorder is distinguished from normal variations in academic attainment due to external factors (e.g., lack of

educational opportunity, consistently poor instruction, learning in a second language), because the learning difficulties persist in the presence of adequate educational opportunity and exposure to the same instruction as the peer group, and competency in the language of instruction, even when it is different from one's primary spoken language.

Intellectual disability (intellectual developmental disorder) :

Specific learning disorder differs from general learning difficulties associated with intellectual disability, because the learning difficulties occur in the presence of normal levels of intellectual functioning (i.e., IQ score of at least 70). If intellectual disability is present, specific learning disorder can be diagnosed only when the learning difficulties are in excess of those usually associated with the intellectual disability.

Learning difficulties due to neurological or sensory disorders :

Specific learning disorder is distinguished from learning difficulties due to neurological or sensory disorders (e.g., pediatric stroke, traumatic brain injury, hearing impairment, vision impairment), because in these cases there are abnormal findings on neurological examination.

Neurocognitive disorders :

Specific learning disorder is distinguished from learning problems associated with neurodegenerative cognitive disorders, because in specific learning disorder the clinical expression of specific learning

difficulties occurs during the developmental period, and the difficulties do not manifest as a marked decline from a former state.

Attention-deficit/hyperactivity disorder :

Specific learning disorder is distinguished from the poor academic performance associated with ADHD, because in the latter condition the problems may not necessarily reflect specific difficulties in learning academic skills but rather may reflect difficulties in performing those skills. However, the co-occurrence of specific learning disorder and ADHD is more frequent than expected by chance. If criteria for both disorders are met, both diagnoses can be given.

Psychotic disorders :

Specific learning disorder is distinguished from the academic and cognitive-processing difficulties associated with schizophrenia or psychosis, because with these disorders there is a decline (often rapid) in these functional domains.

Comorbidity :

Specific learning disorder commonly co-occurs with neuro-developmental (e.g., ADHD, communication disorders, developmental coordination disorder, autistic spectrum disorder) or other mental disorders (e.g., anxiety disorders, depressive and bipolar disorders). These comorbidities do not necessarily exclude the diagnosis specific learning disorder but may make testing and differential diagnosis more difficult, because each of the co-occurring disorders independently interferes with the execution of activities of daily living, including

learning. Thus, clinical judgment is required to attribute such impairment to learning difficulties. If there is an indication that another diagnosis could account for the difficulties learning keystone academic skills described in Criterion A, specific learning disorder should not be diagnosed.

Published by Central Government Gazette

Specific Learning Disability (SLD) :

Definition - "specific learning disabilities" means a heterogeneous group of conditions wherein there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and developmental aphasia;

Screening – The teachers of the public and private school shall carry out the screening in Class III or at eight years of age, whichever is earlier. The screening test is given in Figure 2. If in the screening shows test three or more answers are in “frequently” column, then the child should be referred for further assessment.

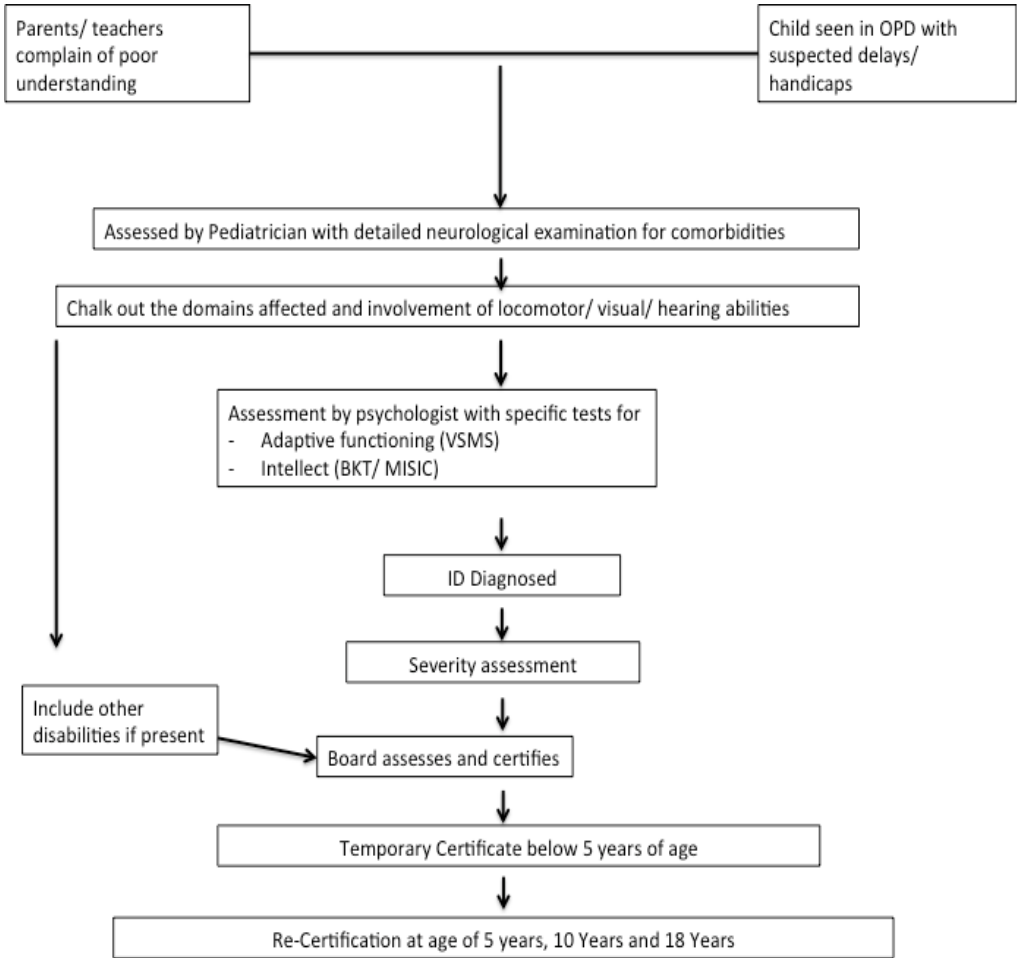
Every school (public and private) shall have a screening committee headed by the principal of the school. After applying the screening test, if an anomaly is detected then, the teacher should bring it to the notice of principal and screening committee of the school. The teachers shall interview the parents to assess their involvement and motivation regarding their child’s education. If the parents are motivated

and screening questionnaire suggests SLD, then child should be referred for further assessment.

The child shall be referred to pediatrician for SLD assessment by the principal of the school with the recommendations of the screening committee endorsed.

Figure : 1.1

The suggested flow for identification and certification of Children with suspected Specific Learning Disability.



Diagnosis :

The diagnosis will require a team approach involving a pediatrician and clinical or rehabilitation psychologist. This would involve three steps :

Step 1 : Assessment of pediatrician : The pediatrician will do the initial assessment. This will involve a detailed neurological examination including vision and hearing assessment. It has to be ensured that the child has normal visual acuity and hearing before proceeding to next step.

Step 2 : IQ Assessment : Child/ clinical psychologist will do the IQ assessment using MISIC or WISCIII. If the IQ is determined to be > 85, then step 3 will be applied.

Step 3 : SLD Assessment : This would involve application of specific psychometric tests for diagnosing SLD and giving it a ***severity scale***.

Diagnostic Tool :

National Institute for Mental Health and Neurosciences (NIMHANS) battery shall be applied for diagnostic test for SLD.

Medical Authority :

The Medical Superintendent or Chief Medical Officer or Civil Surgeon or any other equivalent authority as notified by the State Government shall be head the certification authority. The medical authority will comprise of :

The Medical Superintendent or Chief Medical Officer or Civil Surgeon or any other equivalent authority as notified by the State Government

Pediatrician or Pediatric Neurologist (where available)Clinical or Rehabilitation PsychologistOccupational therapist or Special Educator or Teacher trained for assessment of SLD.

Validity of Certificate :

The certification will be done for children aged eight years and above only. The child will have to undergo repeat certification at the age of 14 years and at the age of 18 years. The certificate issued at 18 years will be valid life-long.

Origin of the research problem :

Learning disabilities can be lifelong conditions. In some people, several overlapping learning disabilities may be apparent. Other people may have a single, isolated learning problem that has little impact on their lives.

The severe cases of learning disability can be easily picked up by teachers and parents, as these cases suffer from repeated failures in the exams, but the mild and moderate cases cannot be picked up easily and scientifically without specific testing procedure by clinical psychologists which takes up to two hours to two days. It is impractical and costly to do the procedure in all the students but it is imperative not to miss any child with learning disability and ruin him of his rights. For serving this

purpose a scientifically devised screening test is needed which can be applied by teachers to distinguish children at high risk of dyslexia by subjecting all the students to that test.

In Current situation, there are several students who have learning disability and on another side they possess an outstanding gift or talent and are capable of high performance. Some of these students are identified and their needs are met. This happens only rarely, however, unless a school specifically decides to identify and then serve these students. The majority of students who are gifted with learning disabilities "fall through the cracks" in the system. Even fewer students with high potential and learning disabilities will be recognized or fully served, and then we can avoid great waste of intellectual potential.

Nowadays to assess learning disability is all about time consuming and lengthy process and also it cost goes high. Normally it takes around 2 or 3 days and 2000 to 3000 Rs. whereas one standard screening test can screen learning disability in less time as well as it low cost.

So that, we need a standard screening test for masses, suffering from learning disability.

The Gujarat Government every year arranges medical health checkup programs for primary school students, and provides medical services to those students who are suffering from some illness. After development of this screening test, students with high risk can be

screened out and further detail assessment can be done. Later on government can provide special remedial education services to those students.

In short, we intended to develop a questionnaire on observational inventories, which can be filled in by teachers and parents alike. It can be possible in very short time and it can save money also.

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CHAPTER : 2

REVIEW OF LITERATURE

Introduction :

Before initiating any research project, it is enlightening to know history of the subject. For that purpose, review of literature is done. It gives us clear understating of research problem, limitations and help us in planning our future course of action. We studied latest foreign and Indian screening tools as well as books and online material.

Tests studied :

(1) Specific Learning Disability:

Comprehensive Diagnostic Battery, Dr. Manju Mehta and Dr. Rajesh Sagar. (Age range 6 to14 years).This test assesses different areas of reading, writing, spelling, comprehension and Arithmetic. The test was developed by Department of Psychiatry, AIIMS, New Delhi in 2003. It was administered on 120 children with SLD and 120 children with normal academic records and no behavioral problems. The result revealed that the profile of SLD children was different from controls in all areas of assessment. The standardization of assessment battery was done on 36 children referred from different schools or brought by their parents for academic and behavioral problems were assessed in details. The test retest reliability was .73 and content validity of the test was .78.

Screening Questionnaire (SLD-SQ). Dr. Uday Kumar Sinha. Additional professor and head, department of clinical psychology, Institute of Human Behavior and Allied Sciences, New Delhi. The Age range of the tool is 5 to 15 years. It is brief screening instrument having 12 questions. The answer is in simple yes or no. The tool aims to facilitate early identification of Specific Learning Disability (SLD) which can be administered and scored easily and can reliably detect the possibility of SLD. There is 1 score for each questions. Maximum score is 12 and cut off is 4. It was administered on 250 school going children of class 3 to 7 from private English medium school of Delhi and 50 children from Child Guidanceclinic of tertiary level of mental health institute with diagnosis of SLD. The tool was filled for all 300 students with the help of school teachers as well as parents. Reports of the teachers and parents of non-clinical and clinical children on the tool were subjected to analysis. Total 50 non-clinical and 10 clinical children were re assessed after the gap of 1 month to establish reliability of the instrument. Test retest reliability is .87, sensitivity and specificity of the tool with different cut-off scores of 3 to 6 ranged between sensitivity- (.89 to .61) and specificity –(.62 to .85).

(2) Learning Disabilities Diagnostic Inventory (LDDI)

Helps identify intrinsic processing disorders. It is developed Donald D. Hammill and Brian R Briant. The tool is intended to help diagnose the receptive and excessive dysphasia, dyslexia, dysgraphia dyscalculia and disorders in executive functioning. It is used for students

from grade 3 to 12. It is composed of six scales: listening, speaking, reading, writing, mathematics and reasoning. Each scale consists of 15 items that describe specific behaviors associated with learning disabilities in a particular content area. The rating is done by teachers and professionals on a scale of 1 to 9. Raw scores are calculated for each scale by adding the rating for all the items. These scores are then converted to stanine and percentile using normative data. Three type of validity was established is this tool: content description, criterion-prediction and construction identification. Its reliability was established by content sampling, time sampling and scorer differences.

Dyslexia portfolio - (6 to 16 years)

A Battery of short diagnostic tests that help identifies areas of difficulty in literary learning.

Books and Material referred :

[1] Assessment of Learning Disabilities :

In order to study the cultural difference between prevalence and prognosis of learning disabilities, we selected this book. "Assessment of Learning Disabilities: Cooperation between Teachers, Psychologists and Parents" offers easy to read information of children's learning disability assessment. It discusses the complex relationship between academic skills and cognitive functions, and the development and significance of these skills and functions for learning. First it describes what

efficient learning requires of the school, class, family, and child. It also defines learning disability, exploring how learning disabilities differ from school difficulties caused by other factors. The second part presents a four-step model for learning disability assessment, which emphasizes cooperation between the teachers, psychologist, and the family. The third part describes difficulties in academic skills and cognitive functions, as well as their assessment. The final part discusses interpretation — often so difficult in assessment — and shows how conclusions can be made from the results and how support can be planned for the school, class, and home. Writers of the book are experts of Learning Disabilities from Finland, Kenya, Namibia and Zambia working together in the project Education for the Children with Learning Disabilities: African-European Co-operation for Promoting Higher Education and Research.

[2] The International Book of Dyslexia :

In order to understand the international context of LD, we referred to this book by Robin Salter and Ian Smythe. It includes details on current and proposed establishments to help the learning disabled child, in various countries. It also includes various provisions for remediation, recognition, treatments and other important aspects through nations.

[3] Dyslexia and the University :

This booklet is written in simple English, to make it easier to read for students with dyslexia as well as busy university lecturers, student services personnel, administrators and others who work with people who have dyslexia. It provides a starting point for people wishing to understand this syndrome that is often referred to as a 'hidden' disability. As such, it is neither prescriptive nor exhaustive. An extensive bibliography is included to satisfy the inquisitive mind.

This book is not only based on research on the neuro-physiological basis of dyslexia, but all examples are based on true-life experiences. It provides an overview of what we know about dyslexia, the difficulties experienced by university students with dyslexia and appropriate accommodations and modifications to assist them to achieve success. There are examples of courses of study and examinations papers that were found to be effective with dyslexic students. There are also examples that are considered unsuitable for dyslexic students. Much research has been conducted in the past on learning disabilities. However, in recent years, the National Institutes of Mental Health have undertaken extensive research on dyslexia.

Dyslexia is the most common learning disability. It accounts for 85% of all learning disabilities. It is not surprising therefore, that dyslexia will be the learning disability that is more apparent at

the university level. Most other learning disabilities on the other hand, do not affect reading after the student reaches the grade 5 level.

[4] The Dyslexia Handbook for Teachers and Parents in South Dakota :

The people of South Dakota have a long history of understanding the importance readinghas for our students. The State of South Dakota recognizes dyslexia as a type oflearning disability that affects students throughout the state. Some students may struggle during early reading acquisition, while others do not struggle until the latergrades when they face more complex language demands. For some struggling readersthe difficulty with reading may be the result of the learning disability, dyslexia.

The purpose of this guide is to provide teachers a resource where they can learn more about dyslexia. This guide is a starting point and has additional resources listed for teachers to access when they suspect a student may have dyslexia. In order to assure a broad representation for input into this guide, a diverse group of individuals with expertise in learning disabilities were brought together to develop this guide.

[5] Dyslexia in the class-room :

The degree of difficulty a child with dyslexia has with reading, spelling, and/or speaking varies from person to person due to

inherited differences in brain development, as well as the type of teaching the person receives. The brain is normal, often very "intelligent," but with strengths in areas other than the language area.

This "difference" goes undetected until the person finds difficulty when learning to read and write. Each individual with dyslexia is unique, but the multisensory approach is flexible enough to serve a wide range of ages and learning differences. A multisensory approach can be valuable to many; to the dyslexic child it is essential. The expertise of the teacher is the key. The intent of this toolkit is to provide classroom teachers with basic information about dyslexia, dispel some of the myths and misconception surrounding it and be a resource that will increase their capacity to ensure the success of the diverse group of learners in their classrooms.

[6] Understanding Dyslexia: An Introduction for Dyslexic Students in Higher Education :

Written and researched byJill Hammond and Fabian Hercules. This book is designed to be explored rather than read cover to cover. There are initial questions which you may like answered and you will find the first few sections may address these. Do take time to reflect over the contents of this book and how they relate to you. You will have to interpret much of this information in the light of your own experiences, to develop your own

awareness of dyslexia and to take action which is appropriate to you. There are quotations from dyslexic students throughout the sections and these are highlighted in red text. Some of their experiences might help you to reflect on your own. This book has a numbered sequence of sections covering different aspects of being dyslexic. A remedial Training manual for children with specific learning disability for parents, teachers, counselors.

- Dyslexia guidance book

- Dyscalculia guidance book

Study visits :

To understand Problems and Issues in Real Life settings

Lavaad visit : Government run Schools

DATE : 13 July, 2016

DAYS : 1 DAY

It was visit of a school at Lavaad village in Gandhinagar district where inclusive education is given by famous LD activist and actor Swaroop Sampat Raval . Swaroop Samapt raval has been doing work in this area for last many years in Gujarat. She has also written a book on LD. So we went to visit her where she has been giving inclusive education at a government run primary school. We discussed our plan of preparing and LD checklist with her and she gave some valuable

suggestions regarding issues of such students in government run schools. She also suggested that how the tool should be prepared. Our checklist would be mostly used by teachers. So it was also important to talk to teachers. After talking with teachers we found that most of them were not very clear about the problems of children with LD.

Bharuch visit : Visit of a Center Teaching LD students

DATE : 7 April 2016

DAYS : 1 DAY

We also did a visit at Bharuch where a center of teaching the students with learning disability has been run with the help of the Gujarat Government. At the center we met several students and teachers and talked with them about our project. They gave us some valuable information faced by the students. They also showed us their teaching pattern and material. We requested them to take part in our tool preparation by providing subjects.

Mumbai visit : Participated in National Conclave on Specific Learning Disorders (SLD)

Date: 26 to 29 October 2017

Participated and took training on DALI (DALI: Dyslexia Assessment for Languages of India (Screening Tool) by Dr Nandini Singh, NBRC. This indigenous screening and assessment tool has been developed by the National Brain Research Centre, Manesar (NBRC),

with funding from the Ministry of Science and Technology. This path-breaking tool is in four languages: English, Hindi, Marathi and Kannada. The conclave was organized on SLD policies and practice by Maharashtra Dyslexia Association.

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CHAPTER : 3

METHODOLOGY

INTRODUCTION :

Learning disabilities can be lifelong conditions. In some people, several overlapping learning disabilities may be apparent. Other people may have a single, isolated learning problem that has little impact on their lives.

The severe cases of learning disability can be easily picked up by teachers and parents, as these cases suffer from repeated failures in the exams, but the mild and moderate cases cannot be picked up easily and scientifically without specific testing procedure by clinical psychologists which takes up to two hours to two days. It is impractical and costly to do the procedure in all the students but it is imperative not to miss any child with learning disability and ruin him of his rights. For serving this purpose a scientifically devised screening test is needed which can be applied by teachers to distinguish children at high risk of dyslexia by subjecting all the students to that test.

In Current situation, there are several students who have learning disability and on another side they possess an outstanding gift or talent and are capable of high performance. Some of these students are identified and their needs are met. This happens only rarely, however, unless a school specifically decides to identify and then serve these students. The majority of students who are gifted with learning

disabilities "fall through the cracks" in the system. Even fewer students with high potential and learning disabilities will be recognized or fully served, and then we can avoid great waste of intellectual potential.

Now-a-days to assess learning disability is all about time consuming and lengthy process and also it cost goes high. Normally it takes around 2 or 3 days and 2000 to 3000 Rs. whereas one standard screening test can screen learning disability in less time as well as it low cost.

So that, we need a standard screening test for masses, suffering from learning disability.

The Gujarat government every year arranges medical health checkup programs for primary school students, and provides medical services to those students who are suffering from some illness. After development of this screening test, students with high risk can be screened out and further detail assessment can be done. Later on government can provide special remedial education services to those students.

In short, we intended to develop a questionnaire on observational inventories, which can be filled in by teachers and parents alike. It can be possible in very short time and it can save money also.

SIGNIFICANCE OF THE STUDY :

- With this test we can screen students with high risk of Learningdisability.

- This screening test will be time savvy than normal assessment tools.
- This test can reduce the charges to assess the learning disability.
- This test can be used by any trained person rather than only Psychologist.
- Can be easily available.
- Test can aware the people about learning disability.
- This can be used in group rather than by individual.
- By knowing early, if a child is suffering through learning disability, school or teachers can prepare further intervention plan for that special child.
- We can know the specific field from which child is suffering.
- Behavioral, social, emotional and educational issues which are related with this disorder can be reduced by early identification and intervention.

OBJECTIVES :

[1] To facilitate the development of screening test for learning disability that can be useful to identify hidden potentiality of learning disability.

[2] To develop a screening test this is time savvy and cost savvy.

[3] To stimulate the orientation and training of academician toward learning disability.

[4] To facilitate preparing intervention plans or strategies for learning disable child.

STATEMENT OF PROBLEM :

"**Development of a Screening Test to Assess Learning Disability by Teachers and Parents**"

MAKING OF THE TOOL :

Formation of the Tool and Pilot study :

After studying different tools, field visits and taking advice of experts like pediatricians psychologists, special educators, we prepared a raw questionnaire of 54 items describing different behaviours: reading, writing, comprehension, maths and general. Different five areas related to learning disabilities were covered. We included total 17 question (sub sections also in some totaling 54) questions in each of the sections. First a pilot study was done on 100 students. On the basis of pilot study we checked internal consistency of the tool which was found adequate.

Expert Advice :

After that we sent the raw questionnaire to experts all over country for their opinion about types of sections and questions. We received 25 reviews. Majority of the experts were of the opinion that the sections, we proposed, are good and questions are also adequate and relevant.

Reliability Test :

Table : 3.1

Reliability Statistics

Cronbach's Alpha	N of Items
.977	52

Total : 3.1 questions were analyzed using Cronbach's Alpha test for reliability. It was found .977. Scale : ALL VARIABLE

Table : 3.2

Case Processing Summary

		N	%
Cases	Valid	337	100.0
	Excluded[a]	0	.0
	Total	337	100.0

a. Listwise deletion based on all variables in the procedure.

Standardization of the tool :

Sampling :

For standardization of the tool we took sample of 337 students (146 English medium and 191 Gujarati medium, 176 girls and 161 boys). The sample was taken from standard 3, 4, 5, 6 students.

Table : 3.3

Name of Schools

Schools Name		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	LPS	62	18.4	18.4	18.4
	JHA	27	8.0	8.0	26.4
	VVG	98	29.1	29.1	55.5
	GGJ	91	27.0	27.0	82.5
	VVE	59	17.5	17.5	100.0
	Total	337	100.0	100.0	

Table : 3.4

Sex

Sex		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	161	47.8	47.8	47.8
	Female	176	52.2	52.2	100.0
	Total	337	100.0	100.0	

Table : 3.5

Medium

Medium		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	146	43.3	43.3	43.3
	Gujarati	191	56.7	56.7	100.0
	Total	337	100.0	100.0	

Data Collection:

We took Specific Learning Disability (SLD) test of NIMHANS as gold standard test. The SLD was conducted on all 400 students by expert team. After that the test formed by us was given to teachers to fill. We got responses of all 400 students filled by teachers. Double blind method was used to it.

Statistical Analysis

After completion of data collection, the raw data was given to statistical experts for analysis. The SPSS tool was used for analysis. We found specificity and sensitivity of the tool adequate.

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CHAPTER : 4

ANALYSIS OF DATA AND DISCUSSION

INTRODUCTION :

This chapter includes analysis of data and discussion. We used SPSS (Statistical package for Social Sciences) for data analysis. Mainly ROC curve was used to measure Sensitivity and Specificity of the data collected.

ROC CURVE :

In a Receiver Operating Characteristic (ROC) curve the true positive rate (Sensitivity) is plotted in function of the false positive rate (100-Specificity) for different cut-off points. Each point on the ROC curve represents a sensitivity/specificity pair corresponding to a particular decision threshold. A test with perfect discrimination (no overlap in the two distributions) has a ROC curve that passes through the upper left corner (100% sensitivity, 100% specificity). Therefore the closer the ROC curve is to the upper left corner, the higher the overall accuracy of the test (Zweig & Campbell, 1993[1]).

When the variable under study cannot distinguish between the two groups, i.e. where there is no difference between the two distributions, the area will be equal to 0.5 (the ROC curve will coincide with the diagonal). When there is a perfect separation of the values of the

[1] Zweig MH, Campbell G (1993) Receiver-operating characteristic (ROC) plots: a fundamental evaluation tool in clinical medicine. Clinical Chemistry 39:561-577.

two groups, i.e. there no overlapping of the distributions, the area under the ROC curve equals 1 (the ROC curve will reach the upper left corner of the plot).

The 95% Confidence Interval is the interval in which the true (population) Area under the ROC curve lies with 95% confidence.

The Significance level or P-value is the probability that the observed sample Area under the ROC curve is found when in fact, the true (population) Area under the ROC curve is 0.5 (null hypothesis: Area = 0.5). If P is small (P<0.05) then it can be concluded that the Area under the ROC curve is significantly different from 0.5 and that therefore there is evidence that the laboratory test does have an ability to distinguish between the two groups.

(1) ROC for Reading :

To determine cut of value for Reading based on sensitivity and specificity, ROC has been applied using SPSS package. Following are results of case processing summary.

Table : 4.1

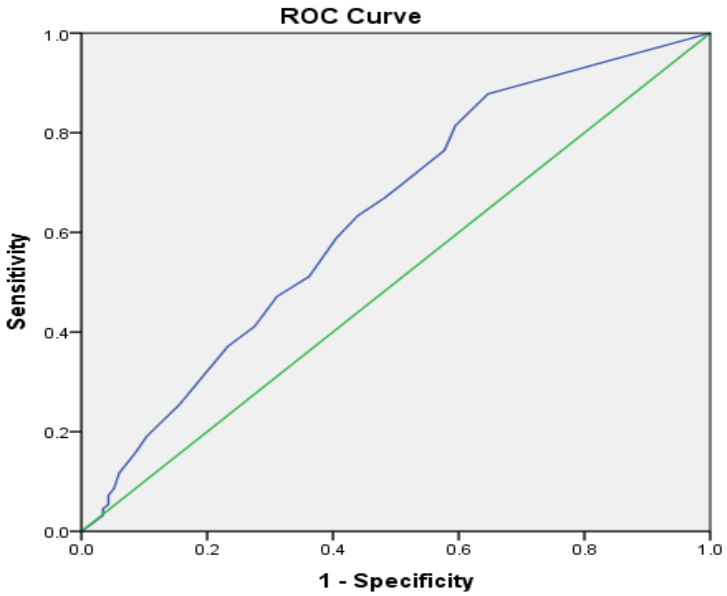
Case Processing Summary

Reading LD	Valid N (list wise)
Positive	**221**
Negative	**116**

Larger values of the test result variable(s) indicate stronger evidence for a positive actual state.
a. The positive actual state is Yes.

Figure : 4.1

ROC OF READING



It can be seen from above ROC curve (blue line), as far as concern of reading is concern ROC curve appeared above the separation line (green line); this indicates there is a different value of sensitivity and specificity for cut off point for Reading.

Table : 4.2

AREA UNDER THE CURVE

Test Result Variable(s) : Reading score				
Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.632	.033	.000	.568	.696
The test result variable(s): Reading score has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.				
a. Under the nonparametric assumption				
b. Null hypothesis: true area = 0.5				

Area under the ROC curve is 0.632 which is grater compare to 0.5 (separation line). This estimated value of area under curve is statistically significance at 0.01% level (Asymptotic Sig. < 0.01). Also, the lower and upper bound is grater compare to 0.5.

Table : 4.3

READING

Below Table indicates coordinates of the curve, which is nothing but combination of Sensitivity and Specificity at various level of Reading Score.

Coordinates of the Curve		
Test Result Variable(s) : Reading Score		
Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.878	.647
1.5000	.814	.595
2.5000	.765	.578
3.5000	.670	.483
4.5000	.633	.440
5.5000	.588	.405
6.5000	.511	.362
7.5000	.471	.310
8.5000	.412	.276
9.5000	.371	.233
10.5000	.253	.155
11.5000	.190	.103
12.5000	.158	.086
13.5000	.118	.060
14.5000	.086	.052
15.5000	.072	.043

16.5000	.059	.043
17.5000	.054	.043
18.5000	.045	.034
19.5000	.032	.034
21.0000	.000	.000

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

In Reading there were 10 questions and each questionwas recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 20. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Reading is around 3; where level of sensitivity is 0.720 and 1-Specificity is 0.530.

1. ROC for Comprehension :

To determine cut of value for Comprehensionbased on sensitivity and specificity, ROC has been applied using SPSS package. Following are results of case processing summary.

Table : 4.4

CASE PROCESSING SUMMARY

Comprehension LD	Valid N (listwise)
Positive	**240**
Negative	**97**

Larger values of the test result variable(s) indicate stronger evidence for a positive actual state.

a. The positive actual state is Yes.

Figure : 4.2

ROC OF COMPREHENSION

It can be seen from above ROC curve (blue line), as far as concern of comprehension is concerned ROC curve appeared above the separation line (green line); this indicates there is a different value of sensitivity and specificity for cut off point for Comprehension.

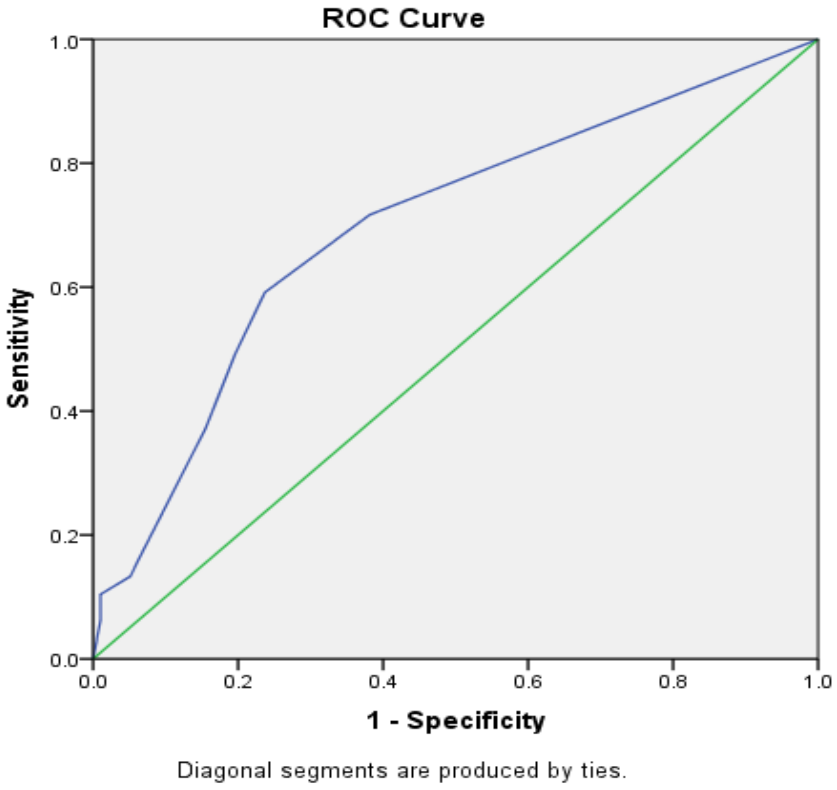


Table : 4.5

COMPREHENSION

Area Under the Curve

Test Result Variable(s) : Comprehension Score

Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.697	.031	.000	.635	.758

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

Area under the ROC curve is 0.697 which is grater compare to 0.5 (separation line). This estimated value of area under curve is statistically significance at 0.01% level (Asymptotic Sig. < 0.01). Also, the lower and upper bound is grater compare to 0.5.

Table : 4.6

COMPREHENSION

Below Table indicates coordinates of the curve, which is nothing but combination of Sensitivity and Specificity at various level of Comprehension score.

COORDINATES OF THE CURVE

Test Result Variable(s) : Comprehension Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.717	.381
1.5000	.592	.237
2.5000	.492	.196
3.5000	.371	.155
4.5000	.158	.062
5.5000	.133	.052
6.5000	.104	.010
7.5000	.063	.010
9.0000	.000	.000

The test result variable(s): Comprehension Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

In Comprehension there were 4 questions and each questions were recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 8. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Comprehension is around 2; where level of sensitivity is 0.550 and 1-Specificity is 0.220.

1. ROC for Writing :

To determine cut of value for writingbased on sensitivity and specificity, ROC has been applied using SPSS package. Following are results of case processing summary.

Table : 4.7

WRITING

Case Processing Summary

Writing LD	Valid N (listwise)
Positive	304
Negative	33

Larger values of the test result variable(s) indicate stronger evidence for a positive actual state.

a. The positive actual state is Yes.

Figure : 4.3

ROC OF WRITING

It can be seen from above ROC curve (blue line), as far as concern of writing is concerned ROC curve appeared above the separation line (green line); this indicates there is a different value of sensitivity and specificity for cut off point for writing.

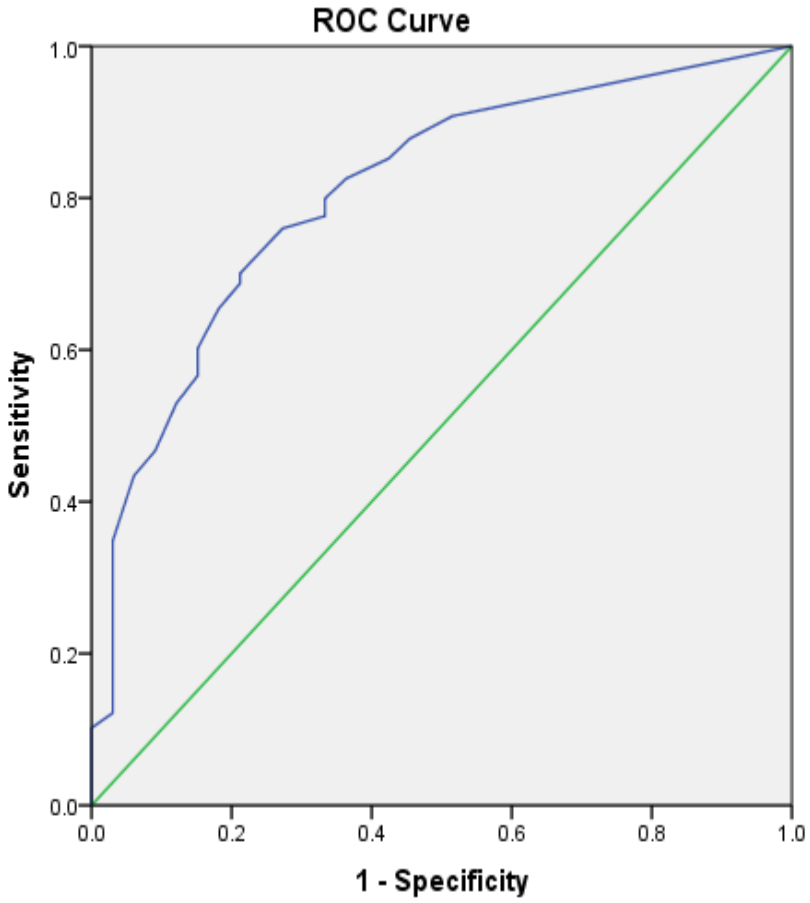


Table : 4.8

WRITING

Area Under the Curve

Test Result Variable(s): Writing Score

Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.809	.038	.000	.734	.884

The test result variable(s): Writing Score has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

a. Under the nonparametric assumption

b. Null hypothesis: true area =0.5

Area under the ROC curve is 0.809 which is grater compare to 0.5 (separation line). This estimated value of area under curve is statistically significance at 0.01% level (Asymptotic Sig. < 0.01). Also, the lower and upper bound is grater compare to 0.5.

Table : 4.9

WRITING

Below Table indicates coordinates of the curve, which is nothing but combination of Sensitivity and Specificity at various level of writing score.

Test Result Variable(s) : Writing Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.908	.515
1.5000	.878	.455
2.5000	.852	.424
3.5000	.826	.364
4.5000	.799	.333
5.5000	.776	.333
6.5000	.760	.273
7.5000	.730	.242
8.5000	.701	.212
9.5000	.688	.212
10.5000	.655	.182
11.5000	.602	.152
12.5000	.566	.152
13.5000	.530	.121
14.5000	.467	.091
15.5000	.434	.061
16.5000	.349	.030
17.5000	.306	.030
18.5000	.260	.030
19.5000	.240	.030
20.5000	.194	.030
21.5000	.164	.030
22.5000	.145	.030
23.5000	.122	.030

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
24.5000	.102	.000
25.5000	.089	.000
26.5000	.063	.000
27.5000	.056	.000
28.5000	.033	.000
29.5000	.030	.000
30.5000	.026	.000
31.5000	.016	.000
33.0000	.000	.000

The test result variable(s): Writing Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

In writing there were 16 questions and each questions were recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 32. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for writing is around 5; where level of sensitivity is 0.785 and 1-Specificity is 0.333.

1. ROC for Math's :

To determine cut of value for Math'sbased on sensitivity and specificity, ROC has been applied using SPSS package. Following are results of case processing summary.

Table : 4.10

MATH'S

Case Processing Summary

Math's LD	Valid N (listwise)
Positive	295
Negative	42

Larger values of the test result variable(s) indicate stronger evidence for a positive actual state.

Figure : 4.4

ROC OF Math's

It can be seen from above ROC curve (blue line), as far as concern of Math's is concerned ROC curve appeared above the separation line (green line); this indicates there is a different value of sensitivity and specificity for cut off point for Math's.

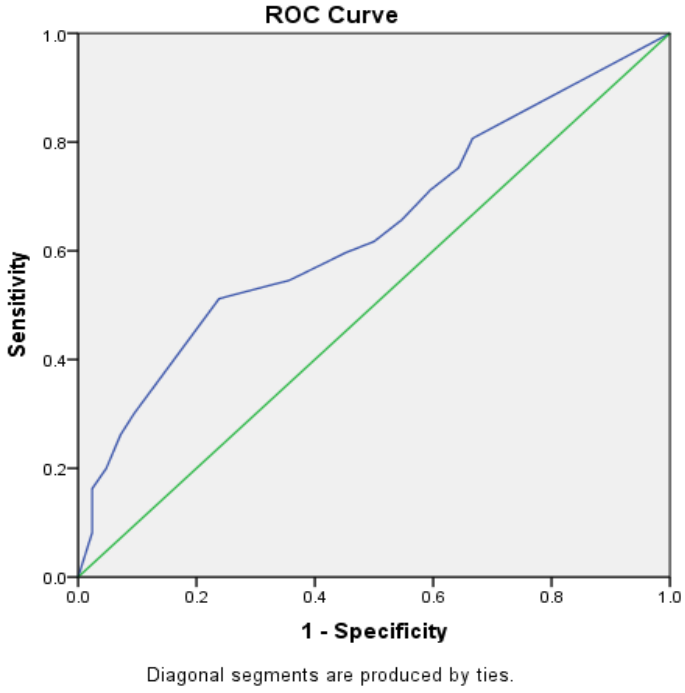


Table : 4.11

MATH'S

Area Under the Curve

Test Result Variable(s): Math's Score

Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.639	.041	.003	.559	.719

The test result variable(s): Math's Score has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

Area under the ROC curve is 0.639 which is grater compare to 0.5 (separation line). This estimated value of area under curve is statistically significance at 0.01% level (Asymptotic Sig. < 0.01). Also, the lower and upper bound is grater compare to 0.5.

Table : 4.12

MATH'S

Below Table indicates coordinates of the curve, which is nothing but combination of Sensitivity and Specificity at various level of Math's score.

Coordinates of the Curve of Math's

Test Result Variable(s) : Math's Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.807	.667
1.5000	.753	.643
2.5000	.712	.595
3.5000	.658	.548
4.5000	.617	.500
5.5000	.597	.452
6.5000	.546	.357
7.5000	.512	.238
8.5000	.302	.095
9.5000	.261	.071
10.5000	.200	.048
11.5000	.163	.024
12.5000	.149	.024
13.5000	.129	.024
14.5000	.108	.024
15.5000	.081	.024
17.0000	.000	.000

The test result variable(s) : Math's Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

In Math's there were 8 questions and each questions were recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 16. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Math's is around 3; where level of sensitivity is 0.680 and 1-Specificity is 0.570.

1. ROC for Overall LD :

To determine cut of value for Overall LDbased on sensitivity and specificity, ROC has been applied using SPSS package. Following are results of case processing summary.

Table : 4.13

Overall LD

Case Processing Summary

Overall LD	Valid N (list wise)
Positive	284
Negative	53

Larger values of the test result variable(s) indicate stronger evidence for a positive actual state.

a. The test result variable(s): Over Score has at least one tie between the positive actual state group and the negative actual state group.

b. The positive actual state is Yes

Figure : 4.5

ROC OF Overall LD

It can be seen from above ROC curve (blue line), as far as concern of Overall LD is concerned ROC curve appeared above the separation line (green line); this indicates there is a different value of sensitivity and specificity for cut off point for Overall LD.

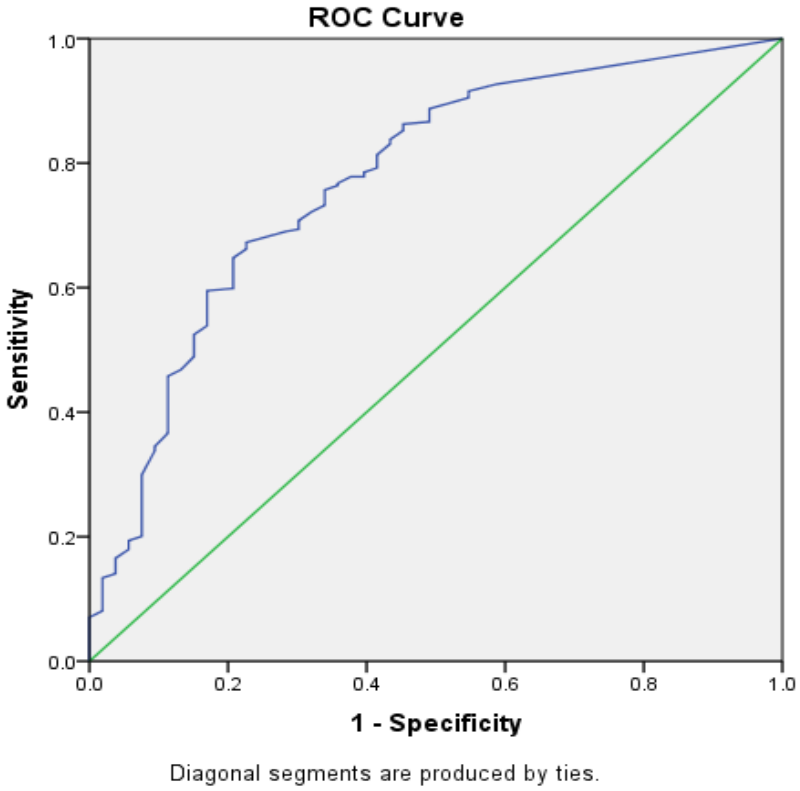


Table : 4.14

Overall LD

Area Under the Curve

Test Result Variable(s): Over All Score

Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.773	.036	.000	.702	.844

The test result variable(s): Over Score has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

Area under the ROC curve is 0.773 which is grater compare to 0.5 (separation line). This estimated value of area under curve is statistically significance at 0.01% level (Asymptotic Sig. < 0.01). Also, the lower and upper bound is grater compare to 0.5.

Table : 4.15

Overall LD

Below Table indicates coordinates of the curve, which is nothing but combination of Sensitivity and Specificity at various level of Overall LD score.

Coordinates of the Curve

Test Result Variable(s): Over All Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
7.0000	1.000	1.000
8.5000	.926	.585
9.5000	.915	.547
10.5000	.905	.547
11.5000	.887	.491
12.5000	.866	.491
13.5000	.863	.453
14.5000	.852	.453
15.5000	.838	.434
16.5000	.831	.434
17.5000	.813	.415
18.5000	.792	.415
19.5000	.785	.396
20.5000	.778	.396
21.5000	.778	.377
22.5000	.768	.358
23.5000	.764	.358
24.5000	.757	.340
25.5000	.743	.340
26.5000	.732	.340
27.5000	.722	.321
28.5000	.708	.302
29.5000	.694	.302
30.5000	.690	.283
32.0000	.673	.226
33.5000	.662	.226
34.5000	.648	.208
35.5000	.641	.208

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
36.5000	.620	.208
37.5000	.599	.208
38.5000	.595	.170
39.5000	.577	.170
40.5000	.553	.170
41.5000	.539	.170
42.5000	.525	.151
43.5000	.507	.151
44.5000	.489	.151
45.5000	.468	.132
46.5000	.458	.113
47.5000	.437	.113
48.5000	.415	.113
49.5000	.377	.113
50.5000	.366	.113
51.5000	.345	.094
52.5000	.338	.094
53.5000	.299	.075
54.5000	.285	.075
55.5000	.275	.075
56.5000	.257	.075
57.5000	.229	.075
58.5000	.218	.075
59.5000	.211	.075
60.5000	.201	.075
61.5000	.194	.057
62.5000	.183	.057
63.5000	.180	.057
64.5000	.165	.038
65.5000	.151	.038
66.5000	.141	.038
67.5000	.134	.019
68.5000	.127	.019
69.5000	.116	.019
70.5000	.102	.019
71.5000	.099	.019
74.0000	.092	.019
76.5000	.085	.019
78.0000	.081	.019
79.5000	.070	.000
81.5000	.063	.000

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
83.5000	.060	.000
84.5000	.056	.000
85.5000	.046	.000
87.0000	.042	.000
88.5000	.039	.000
89.5000	.032	.000
91.5000	.018	.000
94.5000	.011	.000
96.5000	.007	.000
97.5000	.004	.000
99.0000	.000	.000

The test result variable(s) : Over Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

For Overall LD there were 52 questions and each questionwas recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 104. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Overall LD is around 18; where level of sensitivity is 0.800 and 1-Specificity is 0.415.

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CHAPTER : 5

CONCLUSION

Learning disabilities can be lifelong conditions. In some people, several overlapping learning disabilities may be apparent. Other people may have a single, isolated learning problem that has little impact on their lives.

Learning disabilities- means a heterogeneous group of conditions wherein there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and developmental aphasia.

The severe cases of learning disability can be easily picked up by teachers & parents, as these cases suffer from repeated failures in the exams, but the mild and moderate cases cannot be picked up easily and scientifically without specific testing procedure by clinical psychologists which takes up to two hours to two days. It is impractical & costly to do the procedure in all the students but it is imperative not to miss any child with learning disability and ruin him of his rights. For serving this purpose a scientifically devised screening test is needed which can be applied by teachers to distinguish children at high risk of dyslexia by subjecting all the students to that test.

The teachers of the public and private school shall carry out the screening in Class III or at eight years of age, whichever is earlier.Every school (public and private) shall have a screening committee headed by the principal of the school. After applying the screening test, if an anomaly is detected then, the teacher should bring it to the notice of principal and screening committee of the school. The teachers shall interview the parents to assess their involvement and motivation regarding their child's education. If the parents are motivated and screening questionnaire suggests SLD, then child should be referred for further assessment.

Our project was aimed to develop a screening test that could be used by teachers or any other person who want to screen a child with possible Learning Disabilities. To understand previous works done in this field and to clear concepts regarding the subject's different four screening tools or tests were studied in details. Moreover, some books, study material online and offline were referred. We also visited two centers where students with LD were given special education. The visits were aimed to study the real life setting problems. To get more insights into the subject, one national level seminar, we attended proved useful.After studying different tools, field visits and taking advice of experts like pediatricians psychologists, special educators, we prepared a raw questionnaire of 52 items describing different behaviors: reading, writing, comprehension, maths and general. Different five areas related to learning disabilities were covered. We included total 17 question (sub sections also in some totaling 52) questions in each of the sections. First

a pilot study was done on 100 students. On the basis of pilot study we checked internal consistency of the tool which was found adequate.

After that we sent the raw questionnaire to experts all over country for their opinion about types of sections and questions. We received 25 reviews. Majority of the experts were of the opinion that the sections, we proposed, are good and questions are also adequate and relevant.Total 54 questions were analyzed using Cronbach's Alpha test for reliability. It was found .977.

For standardization of the tool we took sample of 337 students (146 English medium and 191 Gujarati medium, 176 girls and 161 boys). The sample was taken from standard 3,4,5,6 students. We took Specific Learning Disability (SLD) test of NIMHANS as goal standard test. The SLD was conducted on all 337 students by expert team. After that the test formed by us was given to teachers to fill. We got responses of all 337 students filled by teachers. Double blind method was used to it. After completion of data collection, the raw data was given to statistical experts for analysis. The SPSS tool was used for analysis. We found specificity and sensitivity of the tool adequate.

In our tool we derived cut off scores to decide LD traits of different five areas. The overall cut off score is 18. If a child gets 18 or more score he or she has a possibility of LD. We can also get cut off score of different areas. The cut off score of Reading section is 3, Comprehension is 2, Writing is 5, and Mathematics is 3 or more. The remaining 5 score of

total the 18 is for ruling out the traits which are not considered for LD, like physical and mental disabilities.

Recommendations for use of the test :

- The tool can be used by the department of primary education of different states for mass screening of students.
- The tool has been developed in English, Hindi and Gujarati languages, so it can be used in many states of the country.
- It is teachers' friendly and very simple test which can be used without much training or experts help.
- We are going to develop an Application and will upload it online, which would be free to use.

-oo-

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APPENDICES

Appendix-1

GUJARATI TEST

અધ્યયન સમસ્યા તારવણી યાદી

ડો. રૂદ્રેશ એમ વ્યાસ । ડો. કેતન ભરડવા । વિરાંગ ભટ્ટ

Section I. Identifying information about the student and examiner

Student's Name: _____

Standard: _____ Gender: ☐ Male ☐ Female

Date of Birth: _____

Date of Rating: _____

Name of the School: _____

Teacher's Name: _____

Section II Score and Record

વિભાગ	મુદ્દા નંબર	સ્કોર
૧. સામાન્ય	૧,૨,૩,૪	
૨. રદ કરવા માટે	૫	
૩. લેખન	૬,૭,૮,૯,૧૦	
૪. ગણિત	૧૧,૧૨,૧૩,૧૪,૧૫	
૫. વાંચન	૧૬,૧૭	
સંપૂર્ણ યાદી	૧ થી ૧૭	

નોંધ : (૧) દરેક વિભાગનાં પેટામુદ્દાઓનાં અંકના સરવાળાને મુદ્દાની સામેના ખાનામાં મુકો.
(૨) વિભાગ- ૧ થી ૫ નાં દરેક મુદ્દાના સરવાળાને વિભાગ: ૧,૨,૩,૪,૫ ની સામેના મોટા અને ઘાટા ખાનામાં મુકો.
(૩) આમ દરેક વિભાગનાં સારવાળાનાં આંકને અહીં ઉપર વિભાગની સામે મુકો.
(૪) અર્થઘટન માટે મેન્યુઅલ જુઓ.

Section III. Important Note

(૧) મુદ્દા ૧ થી ૪ તથા ૬ થી ૧૭ માં આપેલા લક્ષણો વિદ્યાર્થીમાં ક્યારેક દેખાતા હોય તો સામેના ખાનામાં [૨] બે, ક્યારેક દેખાતા હોય તો [૧] એક, અને ક્યારેય ન દેખાતા હોય તો [૦] શુન્ય, લખો. મુદ્દા નંબર ૫ માં હંમેશા દેખાતા હોય તો [૦] શુન્ય, ક્યારેક દેખાતા હોયતો [૧] એક અને ક્યારેય ન દેખાતા હોય તો [૨] બે લખો. (૨) આ ચેકલિસ્ટ છેલ્લા ૬ મહિનાથી વિદ્યાર્થીના સંપર્કમાં હોય તેવા શિક્ષકો ભરી શકે છે.

એમ.ટી.બી. આર્ટ્સ કૉલેજ, અઠવાલાઇન્સ, સુરત
મોબાઈલ નં. ૯૮૭૯૫ ૩૪૯૧૯

વિદ્યાર્થીમાં દેખાતાં લક્ષણો

	વિભાગ: ૧ – સામાન્ય	
(૧)	દેખાય તેજસ્વી અને હોશિયાર પરંતુ	
૧	વાંચવા કે	
૨	લખવા કે	
૩	શબ્દોની	
	બાબતમાં સહાધ્યાયીયો કરતાં પાછળ અથવા આ કાર્યો માટે વધારે પ્રયત્નોની જરૂર પડે	
(૨)	આમાંથી એક કે વધારે વિશેષણો ધરાવનારા છે	
૧	આળસુ, ઢીમા. અતિચંચળ, નકામા, સમસ્યારૂપ, વધારે પડતા શાંત, જોકર, દિવાસ્વપ્ન જોનારા, વાતોડિયા	
(૩)	મૌખિક અભિવ્યકિતમાં સારા પરંતુ	
૧	લખવાના કાર્યમાં ખૂબ સમસ્યા (જે બધા જ આગલા વર્ગોમાં અને બધા જ વિષયોમાં સાતત્યપૂર્ણ રીતે જોવા મળે છે)	
(૪)	બેધ્યાન,અતિશય ચંચળતા અને તરંગીપણુ	
૧	તેનો વારો આવવાની રાહ જોઈ ન શકે	
૨	જવાબ આપવામાં અધીરાપણુ	
૩	પ્રશ્ન સમજયા પહેલાં કે પ્રશ્ન પૂરો થયા પહેલાં જવાબ આપવા તત્પર	
૪	સહાધ્યાયીઓની સરખામણીએ વધુ પડતા બેધ્યાન	
૫	અન્ય વિદ્યાર્થીઓની સરખામણીએ એક સ્થાન પર શિસ્તબદ્ધ રીતે બેસી ન શકે	
	વિભાગ: ૨ – રદ કરવા માટે	
(૫)	દાકતરી રીતે પ્રમાણિત શારીરિક ખામી (આમાંથી કોઈપણ હોય તો)	
૧	આંખ બાબતે : ત્રાંસી આંખ,નબળી દૃષ્ટિ, ધૂજતી આંખો	
૨	સાંભળવા બાબતે : નબળી શ્રવણ શકિત	
૩	હલન-ચલન સંદર્ભે : નબળાં લકવાગ્રસ્ત, પોતાના નિયંત્રણમાં ન હોય તેવા હલન-ચલનો, જેમ કે ધ્રુજારી, ખેંચ કે વાઈ	
૪	મંદબુદ્ધિ : બુદ્ધિની દૃષ્ટિએ પછાત	
	વિભાગ: ૩ – લેખન	
(૬)	પાટીયામાંથી ઉતારવામાં:	
૧	એક એક અક્ષર છૂટો ઉતારે જેથી સહાધ્યાયીઓની સરખામણીમાં વધારેવાર માથુ ઉપર-નીચે કરે	
૨	લખાણ ઉતારવામાં ખૂબ ધીરા છે	
૩	ઉતારો કરવામાં ઘણી ભૂલો કરે છે	
૪	લખતાં-લખતાં ક્યાં અટકાયુ હતું તે શોધી કાઢવામાં તકલીફ અનુભવે	
(૭)	જોડણી અને વ્યાકરણ સંદર્ભે:	
૧	સહપાઠીઓની સરખામણીએ વધુ ભૂલો કરે	
(૮)	અક્ષરો:	
૧	ખૂબ ખરાબ કે વાંચવા મુશ્કેલ	
૨	સીધી લીટી ન જાળવી શકે	
૩	શબ્દો વચ્ચે પૂરતી જગ્યા ન છોડે	
૪	વ્યાકરણ, જોડણી, વિરામ ચિન્હોની ખૂબ ભૂલો	
૫	અક્ષરો નાના મોટા થાય	
૬	શબ્દોમાં અક્ષરો લખવાનાં છૂટી જાય	

	વિદ્યાર્થીમાં દેખાતાં લક્ષણો	
(૦૯)	પરીક્ષામાં :	
૧	માત્ર પ્રશ્નો ઉતારે, જવાબો ન લખે	
૨	પેપર કોરું છોડે (પ્રશ્નો પણ ન ઉતારે)	
૩	જવાબો એવા લખે જે પ્રશ્નોથી સંબધિત ન હોય	
૪	જ્યાં સુધી મદદ ન કરો ત્યાં સુધી ટૂંકા કે વિકલ્પોવાળા જવાબ પણ ન લખી શકે.	
(૧૦)	નિબંધ લેખન	
૧	વધારે મુશ્કેલી, ખાસ કરીને વિચારો ચોકકસ ક્રમમાં પ્રાપ્ત કરવામાં અને અભિવ્યક્ત કરવામાં મુશ્કેલી	
	વિભાગ: ૪ – ગણિત	
(૧૧)	ક્રમ અથવા ક્રમાનુસાર કામ કરવામાં ભૂલ કરે	
૧	દા.ત. અઠવાડિયાના દિવસો, વર્ષના મહિનાઓ, ગણિતના કોષ્ટકો, ઈતિહાસની તવારીખો, વર્ષની ઋતુઓ, સમય વગેરે	
૨	આવતીકાલ,ગઈકાલ અને આજમાં પણ ભૂલ કરે	
૩	એકસાથે વધારે સૂચનવાળા કાર્યો યાદ કરવામાં, ચોકકસક્રમમાં કરવામાં ખૂબ તકલીફ અનુભવે દા.ત. એક સાથે સોંપેલાં ચાર કાર્યો ક્રમ અનુંસાર પૂર્ણ ન કરે	
(૧૨)	સમય અને ગણિત સંજ્ઞાઓ:	
૧	બરાબર(=), વત્તા(+), ગુણ્યા(×), ભાગ્યા(÷),ને ઓળખવામાં તકલીફ	
૨	સમય સંચાલનમાં, ક્રમાનુસાર માહિતી શીખવામાં કે કામ કરવામાં તકલીફ	
૩	સ્થાન-કિંમત અને દશાંશ કિંમતમાં ભૂલ કરે	
(૧૩)	ગણતરી	
૧	વારંવારની સૂચનાઓ કે ખૂબ વધારે પ્રયત્નો કરવા છતાં ગણતરીમાં (ભાગાકાર, ગુણાકાર, સરવાળા,બાદબાકીમાં) તકલીફ	
(૧૪)	વ્યાવહારિક દાખલાઓ:	
૧	ગણવામાં મુશ્કેલી અનુભવે પણ સીધી આંકડાની ગણતરીઓ કરી શકે અથવા વ્યાવહારિક	
૨	દાખલાઓ પ્રત્યે તીવ્ર અણગમો	
(૧૫)	અંતર અને દિશા સંબંધે	
૧	ભાન ઓછું હોય જેમ કે ડાબા-જમણા, ઉત્તર-દક્ષિણ, પૂર્વ-પશ્ચિમ, ઉપર-નીચે, આગળ-પાછળ વચ્ચેનો તફાવત પારખી ન શકે	
૨	રોજિંદા સ્થાનોમાં પણ ભૂલા પડી જવાય (નિશાળના વર્ગખંડ, ઓફિસ, બાથરૂમ વગેરે બાબતે)	
	વિભાગ: ૫ – વાંચન	
(૧૬)	વાંચન (ખાસ કરીને મોટેથી)	
૧	બીજા વિદ્યાર્થીઓ કરતાં ધીમું વાંચે, મુશ્કેલી અનુભવે	
૨	કયારેય ન વાંચ્યુ હોય તેવું લખાણ વાંચવામાં અસામાન્ય રીતે ધીમું અને અસ્પષ્ટ - જે કોઈ	
(૧૭)	વાંચવા લખવામાં જાતજાતની ભૂલો કરે : જેમ કે	
૧	ઊંધું વાંચે. દા.ત. રમના સ્થાને મર	
૨	શબ્દો ટુંકાવે. દા.ત. તરંગના સ્થાને રંગ	
૩	ઊંધું લખે. દા.ત. કરમની જગ્યાએ મરક	
૪	અક્ષરો ઊંધા લખે. દા.ત. દના સ્થાને ૩, ભના સ્થાને બ	

	વિદ્યાર્થીમાં દેખાતા લક્ષણો	
૫	શબ્દોમાં વચ્ચે અક્ષરો ચૂકી જવાય. દા.ત. પગથિયામાં માત્ર પથિયા લખે	
૬	એકના સ્થાને બીજા શબ્દો મૂકે. દા.ત. જાલીમના સ્થાને તાલીમ લખે	
૭	પ્રથમ અક્ષર જોઈને આખો શબ્દ ધારી લે. દા.ત. મલમલ હોય ત્યાં મતલબ સમજે	
૮	અક્ષરો છૂટા પાડીને વાંચે (નાના બાળકની જેમ)	
૯	શબ્દો ને લીટીઓ વાંચવાની ચૂકી જાય કે બે વાર વાંચે.	

Appendix-2

ENGLISH TEST

LEARNING PROBLEMS SCREENING TOOL

Dr. Rudresh M. Vyas | Dr. Ketan Bharadava | Virang Bhatt

Section I. Identifying information about the student and examiner

Student's Name: _____

Standard: _____ Gender: ☐ Male ☐ Female

Date of Birth: _____ Date of Rating: _____

Name of the School: _____

Teacher's Name: _____

Section II Score and Record

Section	Point	Record
General	1,2,3,4	
Rule out	5	
Writing	6,7,8,9,10	
Maths	11,12,13,14,15	
Reading	16,17	
Total	1 to 17	

Note : **(1) There are in all 5 section for rating.**

(2) Each Section contains certain sub-sections.

(3) Place the Score of each sub-section in the box Provided Against them.

(4) Make The Total Score of each Section in the dark box given along with it.

(5) Total Score of each main section be placed on the score board made on the first Page.

(6) See Mannual For Interpretation.

Section III. Important Note

(1) If the Characteristics, Mentioned under points no 1 to 4 and 6 to 17 are seen/found in the student, then Mark ☐ the box with :-

☐2☐ if Found most of the time ☐1☐ if Found Sometimes ☐0☐ if Never Found

in point no. 5

☐0☐ if Always found ☐1☐ if Found Sometime ☐2☐ if Never Found

(2) This Checklist should be filled in by the teacher who has been in constant touch with the student for at least last 6 months.

M.T.B. Arts College, Athwalines, Surat
Mo. 98795 34919

The Characteristics Found in the Students

Section - 01 - General		
1	Appears bright & highly intelligent but..... :	
1	Requires excessive efforts as compared to other students for EITHER	
2	unable to read, or	
3	unable write, or	
	spell at par with other students	
2	Labelled with one or more of these adjectives:	
1	lazy / dull / slow / hyper active / good for nothing / problematic child / too quiet / class-clown / day dreamer / too talkative	
3	Is good at oral expression but	
1	has lots of difficulty in written work.. (which seems to be consistent in all the standards and in all the subjects, in the previous years.)	
4	Inattentiveness, Hyperactivity & Impulsivity :	
1	Cannot wait for his turn to come	
2	Impatient to answer	
3	raises hand before understanding question or completion of the question	
4	Much inattentive as compared to others	
5	Cannot sit at one place in disciplined manner as compared to others	
Section - 02 - Rule out		
5	Physical defects (medically certified) in EITHER of these:	
1	Vision: eg. squint (skew eyes) / tremulous eyes / poor vision OR	
2	Hearing: poor hearing OR	
3	Movement: weak paralysed , persistent involuntary movements like tremors, epilepsy or convulsion or fits disorder	
4	Mental retardation	
Section - 03 - Writing		
6	Copying from the board :	
1	Copies letter by letter hence has to raises and lowers head more Frequently than others	
2	Very slow in copying	
3	Makes lots of mistakes in copying	
4	Difficulty in figuring out where he stopped previously	
7	Spelling or grammatical mistakes:	
1	Commits more errors as compared to others	
8	Handwriting	
1	Poor and difficult to read	
2	Poor maintenance of line	
3	Does not keep proper spacing between words.	
4	Commits too much mistakes of grammar, spelling and punctuation	
5	Lots of variation in font	
6	letters are left in writing words	

9	at the Examination:	
1	Copies questions only but does not write answers OR	
2	leaves paper blank (doesn't copy even the questions) OR	
3	Write irrelevant answers to the questions	
4	unable to answer even objective type question Without prompting	
10	At the essay writing	
1	much difficult, especially in getting ideas in right order and in proper expression	
	Section - 04 - Maths	
11	Commits errors in order or sequential processing :	
1	eg. Days of week/ Months of year/ Tables of maths/ Facts of history/ Seasons of the year/ Time etc...	
2	Confuses in yesterday-today-tomorrow	
3	Difficulty to recall & execution of multiple instructions in proper order eg. can not complete 4 given tasks in a sequence.	
12	Has difficulty in time & mathematical signs	
1	Problem in Identifying Mathematical signs (=,+,-,x,%,/, etc);	
2	managing time, learning sequential information or tasks;	
3	poor in decimal place values	
13	Computation is difficult	
1	(Commits errors in addition, subtraction, multiplication, division) despite repeated instructions & efforts	
14	Practical problems	
1	cannot be done easily but can do arithmetic OR	
2	shows severe avoidance tendency for "word problems"	
15	Distance & Direction Related	
1	Difficulty in awareness of right-left / east-west-north-south / above-below / front-back / forward-backward. Hence often lost in school (always has difficulty in finding classroom, office, bathroom, etc)	
2	has difficulty in choosing proper shoe, sides of object	
	Section - 05 - Reading	
16	Reading (especially aloud)	
1	Very difficult and slow as compared to others	
2	Unusually slow and choppy in reading of new content (which improves if given with pictorial clues or has previously read it)	

17	Makes multiple mistakes in reading or writing, e.g.	
1	Reads backwards eg. 'no' for 'on'	
2	Shortens words eg. 'member' for 'remember'	
3	Mirror writing eg. 'saw' for 'was'	
4	Reversal of letters eg. 'b' for 'd', 'p' for 'q', 'd' for 'p' etc	
5	Omission of letters eg. 'wet' for 'went'	
6	Replaces letters eg. 'want' for 'what'	
7	Makes wild guesses at words on basis of initial letters eg. 'dinner' for 'distance'	
8	Reads letter by letter but does not read words	
9	Misses out lines or words OR reads them twice	

Appendix-3

HINDI TEST

अध्ययन समस्या निर्देशक तालिका

डो. रुद्रेश एम व्यास । डो. केतन भरडवा । विरांग भट्ट

Section I. Identifying information about the student and examiner

Student's Name: _____

Standard: _____ Gender: ☐ Male ☐ Female

Date of Birth: _____

Date of Rating: _____

Name of the School: _____

Teacher's Name: _____

Section II Score and Record

विभाग	मुद्दा नंबर	अंक
१. सामान्य	१,२,३,४	
२. रद करने के लिए	५	
३. लेखन	६,७,८,९,१०	
४. गणित	११,१२,१३,१४,१५	
५. पठन	१६,१७	
संपूर्ण यादी	१ से १७	

टिप्पणी : (१) प्रत्येक मुद्देके सामने को अंक को जोडकर मुद्दे के सामने वाले बोकसमें रखीऐ ।
(२) प्रत्येक विभाग के सामने दिये हुए बोकसमें सभी मुद्दो के अंक को जोळकर रखे ।
(३) प्रत्येक विभाग के सामने (१,२,३,४,५) के अंक उपर दिये हुऐ अंक के नीचे रखीऐ ।
(४) संपूर्ण तालिका के अंक जोडीऐ और अर्थघटन को लीये मेन्युअल देखे ।

Section III. Important Note

(१) मुद्दा १ थी ४ तथा ६ थी १७ मे दिए लक्षण विद्यार्थी मे दिखाई देते हों तो सामने दिए गए कोष्ठक मे [२] दो, कभी-कभी दिखाई देने वाले [१] एक, और कभी न दिखाई दे तब [०] शुन्य, लिखिए. मुद्दा नंबर ५ मे हमेशा दिखाई दे तब [०] शुन्य, कभी दिखाई दे तब [१] एक और कभी न दिखाई दे तब [२] दो लिखिए (२) यह जांचसूची पिछले ६ महिने से छात्रों से संपर्क रखने वाले शिक्षक ही भर सकेंगे ।

એમ.ટી.બી. આર્ટ્સ કૉલેજ, અઠવાલાઇન્સ, સુરત
મોબાઇલ નં. ૯૮૭૯૫ ૩૪૯૧૯

	विद्यार्थी में दिखाई देने वाले लक्षण	
	विभाग: १ - सामान्य	
1	बाह्य रुप से तेजस्वी और होनहार किन्तु	
1	पढने	
2	लिखने	
3	शब्दो के	
	संदर्भ मे सहाध्यायियों से पीछे अथवा इन कार्यों के लिए अधिक प्रयास की आवश्यकता पडती है।	
2	इन मे से एक या अधिक विशेषणो से युक्त	
1	आलसी, सुस्त, अतिचंचल, निकम्मे, निठल्ले, समस्यारुप, अत्यधिक शांत, जोकर, स्वप्न देखने वाले, बातुनी	
3	मौखिक अभिव्यकित में अच्छे	
1	लेखन कार्य मे काफी समस्या (जो सभी पूर्व वर्गों में और सभी विषयो में निरंतर देखने को मिलते हैं)	
4	बेखबर ,अतिशय चंचलता और तरंगीपन	
1	उसकी बारी आने का ईन्तजार नहीं कर सकता	
2	उतर देने में जल्दबाजी	
3	प्रश्न समझने से पूर्व या प्रश्न पूर्ण होने से पहेले उत्तर देने के लिए तत्पर	
4	सहाध्यायियों की तुलना में अत्यधिक बेखबर	
5	अन्य छात्रों की तुलना में एक स्थान पर शिस्तबद्ध रुप में बैठ नहि सकते ।	
	विभाग: २ - रद करने के लिए	
5	चिकित्सा की दृष्टि से प्रमाणित शारीरिक त्रुटियाँ (ईन मे से कोई भी हो तो)	
1	आंख सम्बन्धी : तिरछी आंख, दुर्बल दृष्टि, कांपती आंखे	
2	कान सम्बन्धी : दुर्बल श्रवण शक्ति	
3	हलन-चलन सम्बन्धी : दुर्बल पक्षाघातग्रस्त, स्वयं के द्वारा नियंत्रण मे न हो ऐसे हलन-चलन, जैसे कि कंपन, खिचाई या वाई	
4	मंदबुद्धि : बुद्धि की दृष्टि से पिछडा दुर्बल	
	विभाग: ३ - लेखन	
6	श्यामपटल से लिखने में:	
1	एक एक अक्षर भिन्न-भिन्न लिखना जिससे सहाध्यायियों की तुलना में ज्यादा अनेकबार सिर ऊँचा-नीचा करना	
2	लिखावट लिखने में अति धीरापन	
3	कॉपी करने में अधिक गलती करते हैं	
4	लिखते-लिखते कहाँ पर रुके थे, उसे खोजने में परेशानी महेसूस करना	
7	वर्तनी और व्याकरण सम्बन्धित :	
1	सहपाठियों की तुलना में ज्यादा गलनी करना	
8	अक्षर:	
1	अत्यंत खराब या पढना मुश्किल	
2	सीधी पंक्ति/लाईन न बना सकना	
3	शब्दों के बीच में उचित जगह न छोडना	
4	व्याकरण, वर्तनी, विराम चिन्हों की अनेक गलतियाँ	
5	अक्षर छोटे-बडे होना	
6	शब्दों में अक्षर लिखना छूट जाना	

	विद्यार्थी में दिखाई देने वाले लक्षण	
9	परीक्षामें :	
1	सिर्फ प्रश्नों को लिखना, उत्तर न लिखना	
2	प्रश्नपत्र रिक्त छोडना (प्रश्नों को भी न लिखना)	
3	ऐसा उतर लिखना जिसका प्रश्नो से कोई संबंध न हो	
4	जब तक सहायता नहीं करेंगे तब तक छोटे / संक्षिप्त या वैकल्पिक उतर भी न लिख सकना	
10	निबंध लेखन	
1	ज्यादा दिक्कत, विशेष करके विचारों को निश्चित क्रम में प्राप्त करने और अभिव्यक्त करने में परेशानी	
	विभाग : ४ - गणित	
11	क्रम या क्रमानुसार कार्य करने में गलती करना	
1	उदा. के रुप में सप्ताह के दिवस, वर्ष के महिने, गणित के कोष्टको, इतिहास की तवारीखों, वर्ष की ऋतुएँ, समय इत्यादि	
2	कल, आज और कल में गलती करना	
3	एकसाथ अधिक सूचनों वाले कार्यों को याद करने में, योग्य क्रममें रखने बहुत ही दिक्कत महेसूस करना । उदाहरण के रुप में एक साथ दिये गये कार्यों को क्रम अनुसार पूर्ण नहीं करना ।	
12	समय और गणित संज्ञाएं :	
1	बराबर(=), जोड(+), गुणा(x), भाग(÷), को पहेचान ने में परेशानी	
2	समय संचालन में (प्रबन्धन), क्रमानुसार माहिती सीखने में या काम करने में दिक्कत	
3	स्थान-किमत और दशांश किमत में गलती करना	
13	गिनती	
1	बारंबार की (अनेक बार) सूचनाओं या अत्यधिक प्रयासो के अतिरिक्त गिनती में (भाग, गुणा, जोड, बादबाकी में) परेशानी	
14	व्यावहारिक :	
1	गिनती करने में दिक्कत अनुभव पर सरल अंक की गिनती कर सकना अथवा व्यावहारिक	
2	प्रति अरुचि	
15	अंतर और दिशा संबंधित	
1	अल्पज्ञान होना जैसे कि बाया-दाहिना, उत्तर-दक्षिण, पूर्व-पश्चिम, उपर-नीचे, आगे-पीछे की बीच का अंतर न समझ सकना	
2	रोज के (दैनिक), स्थानो में भी खो जाना (पाठशाला के कमरे, कार्यालय, स्नानागार आदि से सम्बन्धित)	
	विभाग : ५ - पठन	
16	पठन (विशेष करके उँची आवाज से)	
1	अन्य विद्यार्थियों की तुलना में धीरे पढना, दिक्कत महेसूस करना	
2	कभी न पढा हो वैसी लिखावट पढने में असाधारण रुप से कमज़ोर और अस्पष्ट	
17	पढने लिखने में विभ्मन प्रकार की गलतियाँ करना : जैसे कि	
1	उलटा पढना । उदा. 'रम' के स्थान पर 'मर'	
2	शब्दों को छोटा / संक्षिप्त कर देना। उदा 'तरंग' के स्थान पर 'रंग'	
3	उलटा लिखना । उदा. 'करम' के बदले 'मरक'	
4	अक्षरो का उल्टा लिखना । उदा. द के बदले उ, भ के ब	

	विद्यार्थी में दिखाई देने वाले लक्षण	
5	शब्दों के बीच में अक्षरों का छूट जाना । उदाहरण पगथिया के स्थान पर केवल 'पथिया' लिखना	
6	एक के स्थान पर दूसरे शब्दों को रखना । उदा. 'जालीम' के बदले 'तालीम' लिखना	
7	प्रथम/पहले अक्षर को देखकर पूरे शब्द का अनुमान कर लेना । उदा. जहाँ मलमल हो वहाँ 'मतलब' समझना	
8	अक्षरों को अलग करके पढना (छोटे बच्चों की भाँति)	
9	शब्दों की पंक्तियों (लाईन) को पढना भूल जाना या दो बार पढना ।	

Appendix-4

GUJARATI MANUAL

[યુ. જી. સી.ના મેજર રીસર્ચ પ્રોજેક્ટ અંતર્ગત]

અધ્યયન સમસ્યા તારવણી યાદી
મેન્યુઅલ–ઉપયોગ પરિચય પુસ્તિકા

: પ્રસ્તુત કર્તા :

ડૉ. રૂદ્રેશ એમ. વ્યાસ
ડૉ. કેતન જી. ભરડવા
શ્રી વિરાંગ ડી. ભટ્ટ

મનોવિજ્ઞાન વિભાગ

એમ. ટી. બી. આર્ટ્સ કૉલેજ
અઠવાલાઈન્સ
સુરત–૩૯૫ ૦૦૧
(ગુજરાત)

માર્ચ–૨૦૧૯

અધ્યયન સમસ્યા તારવણી યાદી
મેન્યુઅલ – ઉપયોગ પરિચય પુસ્તિકા

--oo--

સૈદ્ધાંતિક પશ્ચાદ્‌ભૂમિકા :

રાઈટ ટુ એજ્યુકેશન એક્ટ મુજબ આપણે ૧૪ વર્ષની ઉંમર સુધીના બાળકોને મફત અને ફરજિયાત શિક્ષણ આપવાની જવાબદારી સ્વીકારી છે. જે અંતર્ગત રાષ્ટ્રીય તથા રાજ્યકક્ષાએ શિક્ષણ વ્યવસ્થામાં અનેક પરિવર્તનો કરવામાં આવ્યાં છે. સર્વશિક્ષા અભિયાન, સંકલિત શિક્ષણ વગેરે યોજનાઓ દ્વારા શિક્ષણને વધુ ને વધુ વ્યાપક બનાવવાના પ્રયાસો ચાલી રહ્યા છે. ગુજરાત રાજ્યમાં સરકારના પ્રયાસો દ્વારા શાળા પ્રવેશોત્સવ, કન્યા શિક્ષણને પ્રાધાન્ય વગેરે યોજનાઓ દ્વારા શાળામાં પ્રથમ વર્ષમાં નામાંકન ૧૦૦% સુધી પહોંચ્યું છે, છતાં પાંચમા ધોરણ સુધીમાં અપવ્યયનો દર ૪ % જોવા મળે છે.

નવા નિયમોના કારણે વિદ્યાર્થીને નાપાસ કરી શકાતો નથી, તેથી વિદ્યાર્થી સંખ્યામાં વૃદ્ધિ થઈ છે, છતાં ચાર પાંચ વર્ષ સુધી શાળાએ જવા છતાં ઘણાં બાળકોને લખતાં, વાંચતાં, ગણતાં આવડતું નથી. ગુજરાત રાજ્યમાં રાજ્ય શૈક્ષણિક સંશોધન અને તાલીમ પરિષદ (GCERT) દ્વારા હાથ ધરવામાં આવેલા અભ્યાસમાં સરકારી શાળાનાં અંદાજે ૧ લાખ ૪૧ હજાર વિદ્યાર્થીઓ વાંચન, લેખન અને ગણનમાં નબળાં હતાં કે ખામી ધરાવતાં હતાં.

તાજેતરમાં ૨૦૧૮માં ગુજરાત રાજ્યના શિક્ષણ વિભાગ દ્વારા સરકારી શાળાના ૬.૨૫ લાખ બાળકો ઉપર હાથ ધરવામાં આવેલા અભ્યાસમાં જોવા મળ્યું કે ધોરણ–૨ના ૬૩.૭૦% વિદ્યાર્થીઓ કક્કો તથા ૭૦.૬૦% વિદ્યાર્થીઓને ૧૦૦ સુધીના એકડા આવડતા ન હતા.

ઉપરોક્ત અભ્યાસો દર્શાવે છે કે, પ્રાથમિક શાળામાં જતાં બાળકો ગુજરાતી તથા ગણિત જેવા વિષયોમાં વાંચન, લેખન તથા ગણનમાં ઉંમરના પ્રમાણમાં નબળાં છે. જો કે, આની પાછળનું કારણ માત્ર શિક્ષણ વ્યવસ્થા કે શિક્ષકો દ્વારા ન ભણાવવું જ નથી. સામાન્ય કરતાં વધુ બુદ્ધિમત્તા ધરાવતા હોવા છતાં, કોઈપણ પ્રકારની શારીરિક ઊણપ ન હોવા છતાં, શીખવા માટેની પૂરેપૂરી તકો મળવા છતાં, શિક્ષકો દ્વારા શિખવાડવાના યોગ્ય પ્રયાસો કરવા છતાં અમુક વિદ્યાર્થીઓ વાંચન, લેખન અને ગણનમાં અતિશય મુશ્કેલી અનુભવતા હોય છે. જ્ઞાનાત્મક પ્રક્રિયાની ખામીના કારણે આવી સ્થિતિ સર્જાય છે. વિદ્યાર્થીઓમાં આકલનશક્તિ નબળી પડે છે અને અધ્યયન અક્ષમતા ઉદ્‌ભવે છે. અમેરિકા, ઈંગ્લેન્ડ, ઓસ્ટ્રેલિયા, કેનેડા જેવા દેશોમાં પણ હાથ ધરાયેલા અભ્યાસોનાં પરિણામો દર્શાવે છે કે, શાળાએ જતાં ૩ થી ૧૦ ટકા બાળકો અધ્યયન અક્ષમતાનો ભોગ બનેલાં હોય છે. સોમાંથી સાત બાળકો ભારે પ્રકારની જ્યારે કુલ ૧૫ ટકા જેટલાં બાળકો હળવાથી ભારે પ્રકારની અધ્યયન અક્ષમતા ધરાવે છે.

અધ્યયન અક્ષમતા એટલે એવી જુદી જુદી લાક્ષણિકતાઓનો સમૂહ જે ભાષા બોલવા, લખવાની પ્રક્રિયામાં ખામી રૂપે દેખાય છે, જે બોલવા, લખવા, વાંચવા, ઉચ્ચારો કરવા કે સંખ્યા અથવા ગણતરી કરવામાં તકલીફરૂપે દેખાય છે. જેમાં ડીસલેક્ષીઆ અને ડેવલપમેન્ટલ અફેઝીઆનો સમાવેશ થાય છે.

- ડીસલેક્ષીઆ એ અધ્યયન અક્ષમતાનો એવો પ્રકાર છે. જેમાં ચોકસાઈપૂર્વકનું વાંચન કે યોગ્ય શબ્દ ઉકેલવામાં સમસ્યા, લખાણ ઉકેલવામાં તકલીફ કે નબળા વાંચનની સમસ્યાઓ જોવા મળે છે.

- ડીસગ્રાફીઆ એ બાલ્યાવસ્થાની એવા પ્રકારની ખામી છે, જેના પરિણામે સામાન્ય બુદ્ધિમતા ધરાવતું બાળક અયોગ્ય લખાણ કે અક્ષરો–શબ્દો બરાબર રીતે ન લખવા અથવા બન્ને સમસ્યાનો ભોગ બને છે.

- ડીસકેલ્કયુલીઆ એ આંકડાકીય માહિતીના ઉપયોગમાં સમસ્યા, ગાણિતીક તથ્યો શીખવામાં અને સારી રીતે, ચોક્કસ–સાચી ગણતરી કરવામાં સમસ્યા જેવા લક્ષણોનો સમૂહ છે.

દેશમાં જ્યારે સો ટકા સાક્ષરતાનું લક્ષ્ય હાંસલ કરવાના પ્રયાસો થઈ રહ્યા છે ત્યારે આવા પ્રકારની અક્ષમતા તેમાં મોટો અવરોધ સાબિત થાય. પ્રાથમિક શિક્ષણના સાર્વત્રીકરણ માટે પ્રચલિત અધ્યાપન ઉપરાંત આવા પ્રશ્નોનો ઉકેલ પણ લાવવો જરૂરી બને છે અને તે માટે આવા અક્ષમતાવાળા બાળકોને વહેલાં ઓળખી તેમના અભ્યાસ માટે વૈકલ્પિક વ્યવસ્થા ઊભી કરવી જરૂરી છે. આ બાબતોને ધ્યાનમાં રાખી 'અધ્યયન સમસ્યા તારવણી યાદી' તૈયાર કરવામાં આવી છે.

ધોરણ–૩ થી ૬માં અભ્યાસ કરતા વિદ્યાર્થીઓના અધ્યયન અક્ષમતા કરવામાં આ યાદી ઉપયોગી બનશે. સમસ્યા તારવણી યાદીની રચનામાં એ બાબત ધ્યાનમાં રાખવામાં આવી છે કે, સામાન્ય શિક્ષક પણ તેના ઉપયોગ દ્વારા વિદ્યાર્થીમાં રહેલી આ સમસ્યાને સરળતાથી ઓળખી શકે. ખાસ કરીને પ્રાથમિક શિક્ષણમાં સમાવિષ્ટ વાંચન, લેખન અને ગણનને આ યાદીમાં સમાવવામાં આવ્યા છે તથા સામાન્ય નિરીક્ષણના મુદ્દાઓ પણ સમાવવામાં આવ્યા છે. અધ્યયન અક્ષમતાના નિદાન માટે અગત્યની બાબત એવા શારીરિક, માનસિક ખામી (આંખ, કાન, હાથ–પગ કે બુદ્ધિ)નો પણ સમાવેશ કરવામાં આવ્યો છે, જેથી વિદ્યાર્થીઓમાં રહેલી અધ્યયન અક્ષમતાની ઊંચી સંભાવનાને ઓળખી શકાશે.

સમસ્યા તારવણી યાદીની રચનામાં એ વાત ધ્યાનમાં રાખવામાં આવી છે કે માત્ર નિદાન માટે જ નહિ પણ બાળકના ઉપચારાત્મક શિક્ષણના આયોજનમાં પણ તેનો સીધો ઉપયોગ થઈ શકે. ૧૭ મુદ્દાઓના ૫૨ (બાવન) પેટા મુદ્દાઓમાં તેનાં ગુણાંકનને ધ્યાનમાં રાખી તેના આધારે જે તે મુદ્દાઓમાંની ગંભીરતાને ધ્યાનમાં રાખી સીધું ઉપચારાત્મક

શિક્ષણ શરૂ કરી શકાય. વિદ્યાર્થી વાંચન, લેખન કે ગણન પૈકી શેમાં વધારે સમસ્યા ધરાવે છે તેનું નિદાન પણ સરળતાથી કરી શકાય.

રાષ્ટ્રીય તથા આંતરરાષ્ટ્રીય કક્ષાએ અધ્યયન અક્ષમતાનાં નિદાન માટે અનેક કસોટીઓ ઉપલબ્ધ છે, પરંતુ તેમાં સમય અને ખર્ચ ખૂબ જ વધી જાય છે, સાથે નિષ્ણાંત, તજજ્ઞો દ્વારા જ તેનો ઉપયોગ થઈ શકે છે. આ મર્યાદાને દૂર કરવા અને બધા જ વિદ્યાર્થીઓ સુધી સામાન્ય શિક્ષકો દ્વારા પહોંચી તેમનામાં રહેલી સમસ્યાને સરળતાથી ઓળખી શકાય, સમય અને ખર્ચ બચાવી શકાય, શિક્ષકો દ્વારા જ આવા બાળકોનું ઉપચારાત્મક શિક્ષણ પણ સરળતાથી કરી શકાય તે બાબતોને ધ્યાનમાં રાખી આ તારવણી યાદી તૈયાર કરવામાં આવી છે.

અધ્યયન સમસ્યા તારવણી યાદીની સંરચના :

યાદીની રચના માટે પહેલાં અધ્યયન અક્ષમતા વિશેના સાહિત્યનું વાંચન–અવલોકન કરવામાં આવ્યું. રાષ્ટ્રીય, આંતરરાષ્ટ્રીય કક્ષાનાં પુસ્તકો, કસોટીઓ, ચેકલીસ્ટ વગેરેનું અધ્યયન કરવામાં આવ્યું. ત્યારબાદ આ ક્ષેત્રે કાર્યરત નિષ્ણાંતો સાથે મળી તેના જુદા જુદા વાંચન, લેખન, ગણન જેવા ક્ષેત્રોમાં જોવા મળતી સમસ્યાઓની યાદી બનાવવામાં આવી. ત્યારબાદ આ યાદી દેશભરમાં આ ક્ષેત્રે કાર્ય કરતા નિષ્ણાંતોને મોકલી તેનો હેતુ સ્પષ્ટ કરી તેઓ પાસે દરેક મુદ્દાની યોગ્યતા , સરળતા, જરૂરિયાત, ઉપયોગિતા વગેરે વિશેના અભિપ્રાયો મંગાવવામાં આવ્યા. તેના આધારે ૧૭ મુદ્દાઓના ૫૨ (બાવન) પેટા મુદ્દાઓ ધરાવતી સમસ્યા તારવણી યાદી તૈયાર કરવામાં આવી. તેનો ક્રોનબેક આલ્ફા પદ્ધતિ દ્વારા રીલાએબીલીટી ટેસ્ટ કરવામાં આવ્યો જે .૯૭૭ જોવા મળ્યો.

Table : 1

RELIABILITY TEST

Reliability Statistics

Cronbach's Alpha	N of Items
.977	52

અધ્યયન સમસ્યા તારવણી યાદીનું પ્રામાણીકરણ :

નમૂના પસંદગી :

યાદી તૈયાર કર્યા બાદ સુરત શહેરની પાંચ શાળાઓ પસંદ કરી, તેમાં ગુજરાતી તથા અંગ્રેજી માધ્યમમાં અભ્યાસ કરતા ધોરણ–૩ થી ૬ના કુમાર તથા કન્યાઓના શિક્ષકો દ્વારા દરેક વિદ્યાર્થી માટેના આ યાદીના મુદ્દાઓના જવાબો મેળવવામાં આવ્યા.

કુલ–૩૩૭ વિદ્યાર્થીઓમાં ૧૬૧ (૪૭.૮%) છોકરાઓ અને ૧૭૬ (૫૨.૨%) છોકરીઓ હતી. માધ્યમની દૃષ્ટિએ જોઈએ તો ૧૪૬ (૪૩.૩%) અંગ્રેજી માધ્યમ તથા ૧૯૧ (૫૬.૭%) ગુજરાતી માધ્યમના હતા.

Table : 3

SEX OF SAMPLE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	161	47.8	47.8	47.8
	Female	176	52.2	52.2	100.0
	Total	337	100.0	100.0	

Table : 4

MEDIUM OF SAMPLE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	146	43.3	43.3	43.3
	Gujarati	191	56.7	56.7	100.0
	Total	337	100.0	100.0	

અધ્યયન અક્ષમતા માટે અગત્યનું પાસુ એવા બુદ્ધિઆંક માટે રેવન્સ પ્રોગ્રેસીસ મેટ્રાઈસીસનો ઉપયોગ કરી દરેક નિદર્શ સામાન્યથી વધારે બુદ્ધિઆંક ધરાવે છે તેની ખાતરી કરવામાં આવી. યાદીના પરિણામોની સરખામણી માટે નિદર્શમાં સમાવેલા બધા જ વિદ્યાર્થીઓને નિષ્ણાંત મનોવૈજ્ઞાનિકો દ્વારા સ્પેસીફિક લર્નિંગ ડીસએબીલીટી(SLD) નિમ્હાંન્સ આપવામાં આવી. એ બાબતનું ધ્યાન રાખવામાં આવ્યું કે, અધ્યયન સમસ્યા તારવણી યાદીના જવાબ આપનાર શિક્ષક પાસે SLDના પરિણામની જાણકારી નહતી અને SLD કરનાર તજજ્ઞ પાસે વિદ્યાર્થીની યાદીનાં પરિણામોની જાણકારી ન હતી. (ડબલ બ્લાઈન્ડ સ્ટડી)

અધ્યયન સમસ્યા તારવણી યાદી તથા SLDના પરિણામો પ્રાપ્ત કર્યા પછી બન્નેના પાંચ વિભાગો – (૧) સામાન્ય, (૨) રદ કરવા માટે, (૩) લેખન, (૪) ગણન, (૫) વાંચન માં દરેક વિદ્યાર્થીના પરિણામો સરખાવવામાં આવ્યા. દરેક નિર્દેશનું નિદાન બન્નેમાં સમાન છે કે કેમ તે જોવામાં આવ્યું.

તબીબીશાસ્ત્રમાં જ્યારે આવા અભ્યાસો કરવામાં આવે ત્યારે તારવણી યાદીઓ કે ચેકલીસ્ટમાં આંકડાશાસ્ત્રીય રીતે સેન્સેટીવીટી, સ્પેસેફીસીટી શોધવામાં આવે છે. સેન્સેટીવીટી દ્વારા જે તે યાદીના ઉપયોગથી સંભાવનાવાળા લોકોના સમાવેશની શક્યતા નક્કી થાય છે. જ્યારે સ્પેસેફીસિટી દ્વારા યાદીની ચોકસાઈ નક્કી થાય છે. જો કે જૈવ તબીબીશાસ્ત્રમાં સેન્સેટીવીટી વધારે રાખવામાં આવે છે. અહીં યાદીની સેન્સેટીવીટી–સ્પેસેફીસીટીના યોગ્ય જોડકાનો ઉપયોગ કરવામાં આવ્યો છે. જે તારવણી યાદીના ગુણાંકન અને અર્થઘટન વિભાગમાં લેખકો દ્વારા દર્શાવવામાં આવ્યું છે.

યાદીના ઉપયોગ માટેની સૂચના :

અધ્યયન સમસ્યા તારવણી યાદીની રચના એ બાબતોને ધ્યાનમાં રાખીને કરવામાં આવી છે કે તે શિક્ષકો દ્વારા સરળતાથી ઉપયોગમાં લઈ આવા વિદ્યાર્થીઓને ઓળખી તેમનું ઉપચારાત્મક શિક્ષણ કરી શકે. આ માટે જે તે વિદ્યાર્થીને ઓછામાં ઓછા છ મહિનાથી વિદ્યાર્થીના સંપર્કમાં હોય તેવા શિક્ષક દ્વારા આ યાદીના જવાબો મેળવવાના છે. જે માટે નીચેની સૂચનાઓ ધ્યાનમાં રાખવી.

સૂચના :

વર્ગખંડમાં, શાળામાં વિદ્યાર્થીઓમાં જોવા મળતા આ યાદીનાં લક્ષણોને ધ્યાનમાં રાખી દરેક લક્ષણની સામેના ખાતામાં શૂન્ય (૦), એક (૧), બે (૨) યાદીની આગળની સૂચના મુજબ લખવાના છે. ત્યારબાદ દરેક મુદ્દાનો કુલ સરવાળો તેના મુખ્ય મુદ્દાની સામેના ખાના □ માં લખવો. યાદીના પાંચ વિભાગોની શરૂઆતમાં વિભાગની સામે ખાનું □ આપવામાં આવ્યું છે તેમાં દરેક વિભાગનો સરવાળો લખવો. ૧૭ પ્રશ્નોના ૫૨ (બાવન) મુદ્દાઓમાં ૦, ૧, ૨ ગુણ લખવાના રહેશે.

વિભાગ :

(૧) સામાન્ય – ૧, ૨, ૩, ૪

(૨) રદ કરવા માટે – ૫

(૩) લેખન – ૬, ૭, ૮, ૯, ૧૦

(૪) ગણન – ૧૧, ૧૨, ૧૩, ૧૪, ૧૫

(૫) વાંચન – ૧૬, ૧૭ના મુદ્દાઓના કુલ સરવાળાને યાદીની આગળના વિભાગ–II : સ્કોર અને રેકોર્ડમાં મૂકવાના રહેશે.

તારવણી યાદીનું ગુણાંકન અને અર્થઘટન : (સ્કોર અને રેકોર્ડ)

યાદીના વિભાગ–૨માં પાંચ વિભાગનાં ખાનામાં દરેક વિભાગનો સરવાળો મૂકો. તે બધાનો સરવાળો કરી કુલ આંક મેળવો.

યાદીના વિભાગ–૧ : સામાન્યમાં બાળકની સામાન્ય છાપના મુદ્દાઓ સમાવાયા છે. જેના કટ ઓફ સ્કોર – ૦૩ છે. કુલ મુદ્દાઓ ૧૦ના કુલ સ્કોર ૨૦માંથી ૦૩ સ્કોર બાળકમાં અધ્યયન અક્ષમતાની સંભાવના દર્શાવે છે.

યાદીના વિભાગ–૨ : રદ કરવા માટેમાં શારીરિક ખામીના મુદ્દાઓ સમાવાયા છે. કુલ મુદ્દાઓ ૪ છે. કુલ સ્કોર–૮માંથી ૦૩ સ્કોર બાળકમાં આંખ, કાન, હલનચલનની કે બુદ્ધિની ખામી નથી એમ દર્શાવે છે. જે અધ્યયન અક્ષમતાની સંભાવના બતાવે છે.

યાદીના વિભાગ–૩ : લેખનમાં લખવાની જુદી જુદી બાબતોને ધ્યાનમાં રાખી ગુણ આપવાનો છે. પાંચ મુદ્દાઓના ૧૬ પેટા મુદ્દાઓના કુલ સ્કોર ૩૨માંથી ૦૬ કે તેથી વધારે

સ્કોર હોય તો બાળકમાં લેખન, સંબંધી સમસ્યાની સંભાવના દર્શાવે છે. જે મુદ્દાઓમાં ઊંચો સ્કોર હોય તેમાં ઉપચારાત્મક શિક્ષણ કરવું જોઈએ. કટ ઓફ સ્કોર : ૬ છે.

Table : 5

WRITING

Below Table indicates coordinates of the curve, which is nothing but combination of Sensitivity and Specificity at various level of writing score.

Test Result Variable(s) : Writing Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.908	.515
1.5000	.878	.455
2.5000	.852	.424
3.5000	.826	.364
4.5000	.799	.333
5.5000	.776	.333
6.5000	.760	.273
7.5000	.730	.242
8.5000	.701	.212

The test result variable(s): Writing Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

યાદીના વિભાગ–૪ : ગણનમાં ગણિતની જુદી જુદી બાબતોને ધ્યાનમાં રાખી ગુણ આપવાના છે. કુલ પાંચ મુદ્દાઓના ૧૧ પેટા મુદ્દાઓનો કુલ સ્કોર ૨૨માંથી ૦૫ કે તેથી વધારે હોય તો બાળકમાં ગણન સંબંધી સમસ્યાઓની સંભાવના છે. કટ ઓફ સ્કોર ગણન માટેનો ૦૩ છે.

Table : 6

COORDINATES OF THE CURVE OF MATH'S

Test Result Variable(s) : Math's Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.807	.667
1.5000	.753	.643
2.5000	.712	.595
3.5000	.658	.548
4.5000	.617	.500
5.5000	.597	.452
6.5000	.546	.357
7.5000	.512	.238

The test result variable(s): Math's Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

યાદીના વિભાગ–૫માં વાંચનની જુદી જુદી બાબતોને ધ્યાનમાં રાખી ગુણ આપવાના છે. કુલ પાંચ મુદ્દાઓના ૧૧ પેટા મુદ્દાઓના ૨૨ કુલ સ્કોરમાંથી ૦૩ કે તેથી વધારે સ્કોર હોય તો બાળકમાં વાંચન સંબંધી સમસ્યાઓની સંભાવના છે. વાંચન માટેનો કટ ઓફ સ્કોર ૦૩ છે.

Table : 7

READING

Below Table indicates coordinates of the curve, which is nothing but combination of Sensitivity and Specificity at various level of Reading score.

Coordinates of the Curve

Test Result Variable(s) : Reading score		
Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.878	.647
1.5000	.814	.595
2.5000	.765	.578
3.5000	.670	.483
4.5000	.633	.440
5.5000	.588	.405
6.5000	.511	.362
7.5000	.471	.310

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

સમગ્ર યાદીમાં ૧૭ વિભાગના ૫૨ (બાવન) પેટા પ્રશ્નોમાંથી કુલ સ્કોર ૧૦૪ થાય. સેન્સેટીવીટી અને સ્પેકોફીસીટીની વેલ્યુને ધ્યાનમાં લેતાં ઓવર ઓલ LD માટેનો કટ ઓફ સ્કોર ૧૮ જેની સેન્સેટીવીટી ૦.૮૦૦ અને સ્પેસેફીસીટી ૦.૪૧૫ છે.

Table : 8

COORDINATES OF THE CURVE-OVERALL LD

Test Result Variable(s): Over All Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
15.5000	.838	.434
16.5000	.831	.434
17.5000	.813	.415
18.5000	.792	.415
19.5000	.785	.396
20.5000	.778	.396
21.5000	.778	.377

The test result variable(s): Over Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

યાદીમાં કુલ–૧૮ કે તેથી વધારે સ્કોર ધરાવનાર બાળક અધ્યયન સમસ્યા ધરાવે છે.

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Appendix-5

ENGLISH MANUAL

UNDER THE U.G.C.

MAJOR RESEARCH PROJECT

LEARNING DISABILITY SCREENING TOOL

MANUAL

: By :

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SURAT-395 001

[Gujarat]

MARCH-2019

Introduction :

The Constitution (Eighty-sixth Amendment) Act, 2002 inserted Article 21-A in the Constitution of India to provide free and compulsory education to all children in the age group of six to fourteen years as a Fundamental Right in such a manner as the State may, by law, determine. The Right of Children to Free and Compulsory Education (RTE) Act, 2009, which represents the consequential legislation envisaged under Article 21-A, means that every child has a right to full time elementary education of satisfactory and equitable quality in a formal school which satisfies certain essential norms and standards.

Article 21-A and the RTE Act came into effect on 1 April 2010. The title of the RTE Act incorporates the words 'free and compulsory'.

'Free education' means that no child, other than a child who has been admitted by his or her parents to a school which is not supported by the appropriate Government, shall be liable to pay any kind of fee or charges or expenses which may prevent him or her from pursuing and completing elementary education.

'Compulsory education' casts an obligation on the appropriate Government and local authorities to provide and ensure admission, attendance and completion of elementary education by all children in the 6-14 age groups. With this, India has moved forward to a rights based framework that casts a legal obligation on the Central and State Governments to implement this fundamental child right as enshrined in

the Article 21A of the Constitution, in accordance with the provisions of the RTE Act.

LD is more than a "difference" or "difficulty" with learning. Learning disabilities are problems that affect the brain`s ability to receive process, analyze, or store information. These problems can make it difficult for a student to learn as quickly as someone who isn`t affected by learning disabilities. Learning disability doesn`t have anything to do with a person's intelligence — after all, successful people such as Walt Disney, Alexander Graham Bell, and Winston Churchill all had learning disabilities.There are several types Of learning disabilities commonly found in students, such as, Dyslexia, dysgraphia, dyscalculia etc.

Definition - "specific learning disabilities" means a hetero-geneous group of conditions wherein there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and developmental aphasia;

Dyslexia is an alternative term used to refer to a pattern of learning difficulties characterized by problems with accurate or fluent word recognition, poor decoding, and poor spelling abilities. If dyslexia is used to specify this particular pattern of difficulties, it is important also to specify any additional difficulties that are present, such as difficulties with reading comprehension or math reasoning.

Dysgraphia is a childhood disorder that results in impaired handwriting, impaired spelling, or both in a child of normal intelligence. It is not a mental health disorder, but rather a learning disability marked by difficulty expressing thoughts and ideas in writing. Dysgraphia is frustrating for the child and can cause great emotional difficulty and distress. A child with dysgraphia may have trouble learning to spell written words, and also have trouble writing at a normal speed, but will not necessarily have problems reading or speaking. Dysgraphia can occur on its own or with dyslexia, which is an impaired ability to read and comprehend written words, or with other selective language impairments that cause problems with learning written and oral language skills.

Dyscalculia is an alternative term used to refer to a pattern of difficulties characterized by problems processing numerical information, learning arithmetic facts, and performing accurate or fluent calculations. If dyscalculia is used to specify this particular pattern of mathematic difficulties, it is important also to specify any additional difficulties that are present, such as difficulties with math reasoning or word reasoning accuracy.

National Status :

Very few peoples are aware with learning disability in India. There is no particular statistics available regarding the prevalence in India. Approximately 10 % of children are estimated to have Learning

disability, out of which 4.6% school going students are identified as severely learning disabled. The fact is that boys show high risk of learning disability than girls. There is no exact data on the number of children requiring support in education in India as most of them are accepted in general stream. Unpublished data in Surat city shows 16% of school going children suffers from learning disability.

Making of the tool :

Formation of the tool and pilot study :

After studying different tools, field visits and taking advice of experts like pediatricians psychologists, special educators, we prepared a raw questionnaire of 54 items describing different behaviours: reading, writing, comprehension, maths and general. Different five areas related to learning disabilities were covered. We included total 17 question (sub sections also in some totaling 54) questions in each of the sections. First a pilot study was done on 100 students. On the basis of pilot study we checked internal consistency of the tool which was found adequate.

Expert advice :

After that we sent the raw questionnaire to experts all over country for their opinion about types of sections and questions. We received 25 reviews. Majority of the experts were of the opinion that the sections, we proposed, are good and questions are also adequate and relevant.

Scale : ALL VARIABLE

Table : 1

Case Processing Summary

		N	%
Cases	Valid	337	100.0
	Excluded[a]	0	.0
	Total	337	100.0

a. List wise deletion based on all variables in the procedure.

Table : 2

RELIABILITY TEST

Reliability Statistics

Cronbach's Alpha	N of Items
.977	52

Total 52 questions were analyzed using Cronbach's Alpha test for reliability. It was found .977.

Standardization of the tool :

Sampling :

For standardization of the tool we took sample of 337students (146 English Medium and 191 Gujarati Medium, 176 girls and 161 boys). The sample was taken from standard 3, 4, 5, 6 students.

Table : 3

SEX OF SAMPLE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	161	47.8	47.8	47.8
	Female	176	52.2	52.2	100.0
	Total	337	100.0	100.0	

Table : 4

MEDIUM OF SAMPLE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	146	43.3	43.3	43.3
	Gujarati	191	56.7	56.7	100.0
	Total	337	100.0	100.0	

Data Collection :

We took Specific Learning Disability (SLD) test of NIMHANS as gold standard test. The SLD was conducted on all 337 students by expert team. After that the test formed by us was given to teachers to fill. We got responses of all 337 students filled by teachers. Double blind method was used to it.

Statistical Analysis :

After completion of data collection, the raw data was given to statistical experts for analysis. We used SPSS (Statistical package for Social Sciences) for data analysis. Mainly ROC curve was used to measure Sensitivity and Specificity of the data collected.We found specificity and sensitivity of the tool adequate.

ROC Curve :

In a Receiver Operating Characteristic (ROC) curve the true positive rate (Sensitivity) is plotted in function of the false positive rate (100-Specificity) for different cut-off points. Each point on the ROC curve represents a sensitivity/ specificity pair corresponding to a particular decision threshold. A test with perfect discrimination (no overlap in the two distributions) has a ROC curve that passes through the upper left corner (100% sensitivity, 100% specificity). Therefore the closer the ROC curve is to the upper left corner, the higher the overall accuracy of the test (Zweig & Campbell, 1993[1]).

[1]Zweig MH, Campbell G (1993) Receiver-operating characteristic (ROC) plots: a fundamental evaluation tool in clinical medicine. Clinical Chemistry 39:561-577.

When the variable under study cannot distinguish between the two groups, i.e. where there is no difference between the two distributions, the area will be equal to 0.5 (the ROC curve will coincide with the diagonal). When there is a perfect separation of the values of the two groups, i.e. there no overlapping of the distributions, the area under the ROC curve equals 1 (the ROC curve will reach the upper left corner of the plot).

The 95% Confidence Interval is the interval in which the true (population) Area under the ROC curve lies with 95% confidence.

The Significance level or P-value is the probability that the observed sample Area under the ROC curve is found when in fact, the true (population) Area under the ROC curve is 0.5 (null hypothesis: Area = 0.5). If P is small ($P<0.05$) then it can be concluded that the Area under the ROC curve is significantly different from 0.5 and that therefore there is evidence that the laboratory test does have an ability to distinguish between the two groups.

Table : 5

WRITING

Below Table indicates coordinates of the curve, which is nothing but combination of Sensitivity and Specificity at various level of writing score.

Test Result Variable(s) : Writing Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.908	.515
1.5000	.878	.455
2.5000	.852	.424
3.5000	.826	.364
4.5000	.799	.333
5.5000	.776	.333
6.5000	.760	.273
7.5000	.730	.242
8.5000	.701	.212

The test result variable(s): Writing Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

In writing there were 16 questions and each questions were recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 32. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for writing is around **6**; where level of sensitivity is **0.768** and 1-Specificity is **0.303**.

Table : 6

COORDINATES OF THE CURVE OF MATH'S

Test Result Variable(s) : Math's Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.807	.667
1.5000	.753	.643
2.5000	.712	.595
3.5000	.658	.548
4.5000	.617	.500
5.5000	.597	.452
6.5000	.546	.357
7.5000	.512	.238

The test result variable(s): Math's Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

In Math's there were 11 questions and each questions were recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 22. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Math's is around **3**; where level of sensitivity is **0.680** and 1-Specificity is **0.570**.

Table : 7

READING

Below Table indicates coordinates of the curve, which is nothing but combination of Sensitivity and Specificity at various level of Reading score.

Coordinates of the Curve

Test Result Variable(s) : Reading score		
Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
-1.0000	1.000	1.000
.5000	.878	.647
1.5000	.814	.595
2.5000	.765	.578
3.5000	.670	.483
4.5000	.633	.440
5.5000	.588	.405
6.5000	.511	.362
7.5000	.471	.310

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

In Reading there were 11 questions and each question was recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 22. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Reading is around **3**; where level of sensitivity is **0.720** and 1-Specificity is **0.530**.

ROC for Overall LD :

To determine cut of value for Overall LD based on sensitivity and specificity, ROC has been applied using SPSS package. Following are results of case processing summary.

Table : 8

COORDINATES OF THE CURVE-OVERALL LD

Test Result Variable(s): Over All Score

Positive if Greater Than or Equal To[a]	Sensitivity	1 - Specificity
15.5000	.838	.434
16.5000	.831	.434
17.5000	.813	.415
18.5000	.792	.415
19.5000	.785	.396
20.5000	.778	.396
21.5000	.778	.377

The test result variable(s): Over Score has at least one tie between the positive actual state group and the negative actual state group.

a. The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

For Overall LD there were 52 questions and each question was recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 104. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Overall LD is around **18**; where level of sensitivity is **0.800** and 1-Specificity is **0.415**.

We analyzed Specificity and Sensitivity of each 5 areas namely - General, For Cancelation, Writing, Math's, Reading and Overall. We found adequate values for discriminating LD and NON LD samples. The cut off points for all five sections are as follows-

General :

In the screening tool first part is general, in this part 10 sub points of four questions of general impressions of children. Total score of 20,out of 20, 03 is the cut off score which indicates the probability of learning disability in a child.

For Cancelation :

In the screening tool part II is for cancelation, it includes the 4 points of physical and intelligence deficiency. Total score of part II is 08,out of which score 03 indicates that the childhas no deficiency in eyes, ears, intelligence or motor skill. which means the probability of learning disability.

Writing :

In writing there were 16 questions and each questions were recorded on the scale of 0, 1 and 2; hence minimum score is 0 and

maximum 32. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for writing is around 5; where level of sensitivity is 0.768 and 1-Specificity is 0.303. If a child gets 6 or more score in this section he or she may have chances of writing problem (Dysgraphia).

Mathematics :

In Math's there were 11 questions and each questions were recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 22. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Math's is around 3; where level of sensitivity is 0.680 and 1-Specificity is 0.570. If a child gets 3 or more score in this section he or she may have chances of mathematical problem (Dyscalculia).

Reading :

In Reading there were 11 questions and each question was recorded on the scale of 0, 1 and 2; hence minimum score is 0 and maximum 22. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Reading is around 3; where level of sensitivity is 0.720 and 1-Specificity is 0.530. If a child gets 3 or more score in this section he or she may have chances of reading problem (Dyslexia).

Overall :

For Overall LD there were 52 questions and each question was recorded on the scale of 0, 1 and 2; hence minimum score is 0 and

maximum 104. On the basis of estimated value of Sensitivity and 1 – Specificity; it can be seen that at Cut Off point for Overall LD is around 18; where level of sensitivity is 0.800 and 1-Specificity is 0.415. If a child gets 18 or more score in this section he or she may have chances of Learning Disability (LD).

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Appendix-6

LIST OF EXPERTS

Sr. No.	Timestamp	Full Name	Age	Sex	Qualification	Working Experience in LD area YEAR	Phone [M] Number
1	2017/04/02 12:03:31 PM GMT+5:30	Dr. Darshana Naik	43	Female	Doctorate	10	9924181291
2	2017/04/02 12:03:51 PM GMT+5:30	Dr. Darshana Naik	43	Female	Doctorate	10	9924181291
3	2017/04/02 4:41:05 PM GMT+5:30	Dr. Darshana Naik	43	Female	Doctorate	10	9924181291
4	2017/04/04 7:04:25 AM GMT+5:30	Sheetal Ghadge	32	Female	Post Graduate	11	9850893773
5	2017/04/07 6:24:10 PM GMT+5:30	Dr. Namita Shenai-Vadhavkar	33	Female	Post Graduate	12	9819092221
6	2017/04/07 8:24:56 PM GMT+5:30	Ami Desai	42	Female	Post Graduate	15	9870545444
7	2017/04/07 10:56:37 PM GMT+5:30	Mimansa Popat	52	Female	Post Graduate	25+	
8	2017/04/08 2:10:38 PM GMT+5:30	Murtuza Railwaywala	40	Male	Post Graduate	20	9426830867
9	2017/04/08 3:25:26 PM GMT+5:30	Prarthana	36	Female	Post Graduate	5	9684600716
10	2017/04/08 10:59:52 PM GMT+5:30	Fatima Sheikh	29	Female	Post Graduate	5	9167009096
11	2017/04/09 9:23:06 AM GMT+5:30	Deepti venugopal	27	Female	Graduate	4	
12	2017/04/09 12:42:55 PM GMT+5:30	Bijal Dolarbhai Bhatt	39	Female	Post Graduate	7	8149028334
13	2017/04/09 2:53:20 PM GMT+5:30	Bindu Patni	60	Female	Post Graduate	30	
14	2017/04/09 6:28:34 PM GMT+5:30	Sangeeta Karmarkar	49	Female	Post Graduate	20	9822043002
15	2017/04/14 12:17:08 PM GMT+5:30	Ms. Rukhshana Sholapurwala	56	Female	Post Graduate	34	9821431939
16	2017/04/17 6:32:34 PM GMT+5:30	Dr. Arti Vijay Mehta	56	Female	Post Graduate	17	9898 866 856
17	2017/04/21 8:42:45 AM GMT+5:30	Jyoti joshi	52	Female	Doctorate	15	9825169165
18	2017/04/21 6:58:55 PM GMT+5:30	Suresh Majmudar	73	Male	Post Graduate	more than 40 yrs	9824003556

19	2017/05/16 9:55:26 PM GMT+5:30	Maya Bohra	48	Female	Doctorate	15	9425074363
20	2017/05/19 7:13:12 PM GMT+5:30	Pradnya Pralhad Waghmare	28	Female	Post Graduate	2	9730417326
21	2017/05/19 11:16:56 PM GMT+5:30	Greg Lobo	67	Male	Post Graduate	Few cases Mainly dealing with adult issues	8097021815
22	2017/05/26 8:56:48 PM GMT+5:30	Ashok Parmar	62	Male	Post Graduate	30	+1 5169743307
23	2017/05/30 11:03:40 AM GMT+5:30	Deepak gohel	38	Male	Post Graduate	15	8401067910
24	2017/06/01 6:55:07 PM GMT+5:30	Sajid Day	27	Male	Post Graduate	4	9737241029

Appendix-7

LIST OF STUDENTS

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
1	Kavya Singhal	F	6th	English	14-Oct	1	9818106403
2	Ritik Chamdak	M	6th	English	9/16/2006	1	7567918692
3	Rudraksh Chandak	M	6th	English	7/9/2007	1	7878486656
4	Parag A.Garg	M	6th	English	30-Jul	1	8000879457
5	Meit Maghani	M	6th	English	1/18/2006	1	9173607532
6	Poojan K Patel	M	6th	English	11 Year	1	9879547370
7	Neel D. Shah	M	6th	English	6/10/2006	1	9825871001
8	Udit D.Khatri	M	6th	English	3/5/2006	1	9909279147
9	Tirth Patel	M	6th	English	6/15/2006	1	9879274886
10	Keshaw Dayma	M	6th	English	11/28/2005	1	9374721071
11	Neel Harlalka	M	6th	English	6/12/2006	1	9374131555
12	Vaidehi B.Ghinaiga	F	6th	English	9/14/2006	1	9825120002
13	Varun Goyal	M	6th	English	8/20/2005	1	9825137812
14	GM Patel		6th	English	5/15/2006	1	9727144147
15	Ritika Bijani	F	6th	English	10/23/2006	1	9979002279
16	Deepanshu	M	6th	English	24/1	1	9991718314
17	Warish Bagracha	M	6th	English	10/9/2006	1	9662742711
18	Palak Suresh Dani	F	6th	English	10 year	1	9377721001
19	Lisa J.Patel	F	6th	English	5/25/2005	1	7874580918
20	Het Doliya	M	6th	English	8/21/2006	1	
21	Giya Gangwani	F	6th	English	5/30/2006	1	9913090672
22	Hriday Pangra	M	6th	English	9/28/2005	1	7069330000
23	Vashisth Jariwala	M	6th	English	11/7/2006	1	9925525676
24	Lovkush Dober	M	6th	English	10/2/2006	1	9737537329
25	Siddharth Rishi S.	M	5th	English	24-Apr	1	9662176611
26	Pranchi Jain	F	5th	English	11/21/2006	1	9374922543
27	Hitarth Rushikesh Patel	M	5th	English	1/15/2006	1	9601506969
28	Chirag Mandhra	M	5th	English	3-Aug	1	8000432064
29	Rytham P. Jain	M	5th	English	23-Oct	1	9925026890
30	Lokesh G.Sanwal	M	5th	English	1/17/2008	1	9374529190
31	VasuRaj Mehta	M	5th	English	9/14/2007	1	9413522135
32	Pranav	M	5th	English	12/12/2006	1	9727590000
33	Yug Godhanj	M	5th	English	8/9/2007	1	9979173476

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
36	Nakul B.Sharma	M	5th	English	10/17/2007	1	9898134261
37	Aadity Patel	M	5th	English	9-Jun	1	9825433019
38	Palak Rajput	F	5th	English	14-2006	1	9427898697
39	Pranchishing Rajput	M	5th	English	10/14/2006	1	8141340699
40	Nand Patel	M	5th	English	9/18/2007	1	9426884906
41	Roshan Rajpurohit	M	5th	English	6/4/2007	1	9824125949
42	Shinchan Khair	M	5th	English	8/1/2007	1	9879465040
43	Palak Kedia	F	5th	English	9/13/2007	1	9377451235
44	Jia Jain	F	5th	English	12/14/2007	1	9426908089
45	Raghav Agrawal	M	5th	English	10/25/2006	1	9327151001
46	Pranshu Desai	M	5th	English	7/17/2007	1	9979858906
47	Kabir Mashruwala	M	5th	English	1/30/2007	1	9825522905
48	Preet Desai	M	5th	English	9/12/2007	1	9825069876
49	Dhruvam Mashruwala	M	5th	English	4/11/2007	1	9879506310
50	Maitri Singhi	F	4th	English	6/10/2008	1	9327407760
51	Lakshya S. Shah	M	4th	English	6/28/2008	1	9426388306
52	Jash Rank	M	4th	English	28-Apr	1	9099255955
53	Krishna Agarwal	F	4th	English	3/16/2008	1	8306673811
54	Jiya N.Patel	F	4th	English	10-Jan	1	9099077026
55	Jiya N. Rijani	F	4th	English	9/11/2008	1	9979002279
56	Mr Chaudhary	M	4th	English	11-Dec	1	9825113079
57	Nitya Jain	F	4th	English	8-Dec	1	7567807310
58	Prashiraj Dodiaya	M	4th	English	15-May	1	9825971744
59	Aastha P.Bansal	F	4th	English	10/11/2008	1	9825241002
60	Mohaa Yadav	F	4th	English	12/19/2008	1	9825802721
61	Dhruv Rochlani	M	4th	English	27	1	9374722317
62	Mannat Mundra	M	4th	English	11/21/2008	1	9375663338
63	Het Patel	M	4th	English	7/16/2007	1	9925030528
64	Dhairya R.Jalan	M	4th	English	3-Oct	1	9327076707
65	Nisarg Saladiya	M	4th	English	1-Feb	1	9825984381
66	Harsh Rathod	M	4th	English	7-Jun	1	9825403498
67	Krisha J.Rathi	F	4th	English	13-2008	1	9979911871
68	Shlesha Patel	F	4th	English	11/7/2008	1	9825185559
69	Kunj	M	4th	English	15-May	1	8690290619
70	Kusum A.Chaudhary	F	4th	English	13-Dec	1	9825198040
71	Krshiv Khandelwal	M	4th	English	7/29/2008	1	9824114443
72	Mahek K.Patel	F	4th	English	11-Apr	1	9924701724
73	Moksha Daga	F	4th	English	1/14/2008	1	9825623201
74	Lakshya M.Jain	M	4th	English	17-Jan	1	9328140345

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
75	Rudraraj V.Dodiva	M	4th	English	16-Sep	1	9825368717
76	Jainam parmar	M	4th	English			9726021983
77	Gazal Bindal	M	3th	English	5-Dec	1	9825100041
78	Rachna tandel	F	3th	English	7/28/2009	1	9898690180
79	Chirag Karnani	M	3th	English	4/24/2009	1	8401207173
80	Sahil Bhagwani	M	3th	English	Ocat-2009	1	9977388420
81	Maynak Motwani	M	3th	English	9/16/2009	1	9820955439
82	Jianshi Shah	F	3th	English	1-Sep	1	9825079820
83	Kaavya Nandwani	F	3th	English	2009	1	9825150064
84	Pragti Mundra	F	3th	English	6-May	1	9979982351
85	Geet Bindal	M	3th	English	5	1	9925244491
86	Mahika Banka	M	3th	English	10/5/2010	1	9327174411
87	Vishal Chaudhary	M	3th	English	12	1	9825411168
88	Pratham Mangukiya	M	3th	English	12/19/2008	1	9737374764
89	Harshita Tilwani	F	3th	English	29-May	1	8000955047
90	Pranjal Balnda	F	3th	English	9/19/2016	1	9033933116
91	Sanyam Chandara	M	3th	English		1	8141800240
92	Mann Jain	M	3th	English		1	9825677611
93	Meet Garg	M	3th	English	3/11/2009	1	
94	Rathi Khushaboo	F	3th	English	7/10/2009	1	9375694203
95	Rahi Kansagara	F	3th	English		1	9825010222
96	Devanh Parekh	M	3th	English	10-Feb	1	9408541504
97	Kabir Guliani	M	3th	English	5-Jun	1	7567174226
98	Kanishka R. Patel	F	3th	English	5/26/2009	1	8141454300
99	Charvi Singhal	F	3th	English		1	9898323942
100	Yash Mehta	M	3RD	English	3/6/2010	1	9824141999
101	PRANSAN	M	3RD	ENGLISH	14-Aug	2	9998210920
102	JINAY SHUKLA	M	3RD	ENGLISH	21-Mar	2	9925623404
103	SMIT	M	3RD	ENGLISH	24-Feb	2	9998972759
104	DAX MASTER	M	3RD	ENGLISH	24-Dec	2	8320895872
105	VATSALAY PARMAR	M	3RD	ENGLISH	14-Aug	2	7016184635
106	HOSHEDEAR	M	3RD	ENGLISH		2	9909917891
107	RITANSHU PARMAR	M	4TH	ENGLISH	9/5/2008	2	9998959122
108	KARAN CHOCHA	M	4TH	ENGLISH	1/21/2007	2	9998013420
109	JEETRAJH GOEHIL	M	4TH	ENGLISH	15-Sep	2	9925241154
110	LAKSHAY	M	4TH	ENGLISH	4/2/2008	2	9601551418
111	RUDRA NAEYE	M	4TH	ENGLISH	5-Sep	2	9998220301
112	NAMAN HATHESHAWRA	M	4TH	ENGLISH	26-Nov	2	9725561618

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
113	UTKARSH DHIMMAR	M	4TH	ENGLISH	19-Jan	2	9998973605
114	DHURV PATEL	M	4TH	ENGLISH	20-Jun	2	9825134645
115	PRIYAM VAGHELA	M	4TH	ENGLISH	13-Mar	2	9998220136
116	JIYAN PATEL	M	4TH	ENGLISH		2	8511108614
117	REET SUNEJA	F	4TH	ENGLISH		2	8328293848
118	JAMIN LAD	M	5TH	ENGLISH	9/22/2007	2	9998223242
119	NACHIKET PATIL	M	5TH	ENGLISH	9/18/2006	2	9998962334
120	DEV SHAH	M	5TH	ENGLISH	2/20/2006	2	9821538118
121	VISHVAYU MOVALID	M	5TH	ENGLISH	12/5/2006	2	9228212376
122	RAM BHATT	M	5TH	ENGLISH	1/29/2008	2	9724328682
123	ABHINAV DASS	M	5TH	ENGLISH	4/7/2008	2	7016110028
124	PRAKHAR JIANDAN	M	5TH	ENGLISH	3/21/2007	2	9727399099
125	PRIYA VANKAR	F	5TH	ENGLISH	11/5/2007	2	9724303878
126	SARTHAK YADAV	M	5TH	ENGLISH	10/21/2007	2	7226954012
127	NEIL NATAL	M	5TH	ENGLISH	2/2/2008	2	7819938165
128	AAKSHAT BHANDARI	M	6TH	ENGLISH	12/29/2006	2	9925083480
129	DHURV ARORA	M	6TH	ENGLISH	9/19/2005	2	8000075730
130	MITRANJH SING	M	6TH	ENGLISH	29-Jul	2	9998219230
131	KHAJAN SHAH	M	6TH	ENGLISH	12/23/2006	2	9601254587
132	CHERIS PAUL	M	6TH	ENGLISH	6/18/2006	2	9726720940
133	DHEYEY PANCHAL	M	6TH	ENGLISH	24---2006	2	9998220077
134	ABHISHEK ANAND	M	6TH	ENGLISH	5/8/2006	2	8000701924
135	DVIJ PARMAR	M	6TH	ENGLISH	29---2006	2	9925026894
136	PALAK SHARMA	F	3RD	ENGLISH	8/5/2008	3	9374502579
137	SUHANI RAWAL	F	3RD	ENGLISH	2/24/2009	3	9824550951
138	RUCHI YADAV	F	3RD	ENGLISH		3	8153875149
139	HANSIKA LAKHARA	F	3RD	ENGLISH	1/1/2010	3	9016870940
140	MADIHA SARBATWALA	F	3RD	ENGLISH	4/25/2009	3	9377274000
141	DIYA RANGRAJ	F	3RD	ENGLISH		3	
142	PRACHI HOLANI	F	3RD	ENGLISH	10/17/2009	3	9879066326
143	MEHNOOR REHMATWALA	F	3RD	ENGLISH	8/21/2009	3	9825962185
144	RANA SAFA	F	3RD	ENGLISH	8/20/2008	3	9824766707
145	MAKWAN PRAGATI	F	3RD	ENGLISH	1/7/2008	3	9925423389
146	BHORANIA SHABNAM	F	3RD	ENGLISH	10/11/2008	3	9913959486
147	AAYUSHI PANDYA	F	3RD	ENGLISH	11/3/2009	3	9427179300

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
148	RISHIKA PATIL	F	3RD	ENGLISH	1/10/2008	3	9723754056
149	RISHVA MASTER	F	3RD	ENGLISH		3	
150	GUARI PARASHAR	F	3RD	ENGLISH		3	9898424500
151	RIDDHI JAIN	F	3RD	ENGLISH	6/3/2009	3	9320972895
152	CAHNNE VARSHITHA	F	4TH	ENGLISH	1/1/2008	3	9924561464
153	SWATI SHANA	F	4TH	ENGLISH	11/1/2006	3	9427422924
154	OZA MAHI R.	F	4TH	ENGLISH	2/9/2009	3	9428357888
155	ZENA PATEL	F	4TH	ENGLISH	11/11/2008	3	9898156619
156	CHAUHAN PREKSHA	F	4TH	ENGLISH	3/12/2009	3	9998962555
157	HATA SHAILI A.	F	4TH	ENGLISH		3	8469626932
158	DADHICH GARIMA M.	F	4TH	ENGLISH	1/11/2008	3	8306501899
159	TANZIM TOLADIYA N.	F	4TH	ENGLISH	2/19/2008	3	9825630899
160	JARIWALA FELISHA	F	4TH	ENGLISH	3/3/2008	3	982546977
161	NISHTHA JARIWALA	F	4TH	ENGLISH	5/21/2008	3	9687337773
162	DALIYA R. DALAL	F	4TH	ENGLISH	10/13/2008	3	9687442884
163	PATEL SHELI	F	3RD	ENGLISH	11/24/2009	3	9924838745
164	VAISHNAVI DIGOPULA	F	3RD	ENGLISH	12/31/2010	3	9925626168
165	UMERA JARIWALA	F	4TH	ENGLISH		3	9824155672
166	RIMIKA MANDAL	F	4TH	ENGLISH	2/28/2009	3	9998408594
167	DISHTI R. DALAL	F	4TH	ENGLISH	13-10-	3	
168	RAY KASHISH	F	4TH	ENGLISH		3	
169	YADAV PRIYANSHI	F	4TH	ENGLISH	9/2/2008	3	9825062500
170	ISHA SONI	F	4TH	ENGLISH	11/23/2007	3	9662700101
171	JARIWALA HANIFA	F	4TH	ENGLISH	4/29/2008	3	9429410058
172	TISHA PATEL	F	4TH	ENGLISH	2/11/2009	3	9825657241
173	HALDAR SAHIN M.	F	4TH	ENGLISH	2/23/2008	3	9924511843
174	PRIYANSHI VYAS	F	4TH	ENGLISH		3	9909854126
175	BHARTI PANGIRAHI	F	4TH	ENGLISH	8/27/2008	3	9913668418
176	RUKAIYA KANCHWALA	F	4TH	ENGLISH	10/9/2008	3	7874786852
177	PATHAN TEHRIN	F	4TH	ENGLISH	8-May	3	840138121
178	AGARWAL CHARU	F	4TH	ENGLISH	4/24/2009	3	9909509065
179	BHATT JAHANVI	F	4TH	ENGLISH	08-	3	9624752070
180	CHAUDHARY KASHISH	F	4TH	ENGLISH	2-Apr	3	9099977810
181	PATEL KRIPA	F	5TH	ENGLISH	4/23/2007	3	8866446142
182	KHIYARA	F	5TH	ENGLISH	8/31/2007	3	99250890

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
183	JANVI	F	5TH	ENGLISH		3	9879002266
184	SHAFIYA KURANWALA	F	5TH	ENGLISH		3	9898699115
185	FATIMA GAJIWALA	F	5TH	ENGLISH	4/6/2007	3	9426886951
186	AFIYA PATHAN	F	5TH	ENGLISH		3	9558935372
187	SABABANU BANARASI	F	5TH	ENGLISH	2/11/2008	3	9898062288
188	AMLA SADIYAH	F	5TH	ENGLISH	2/12/2007	3	9825346631
189	JENNY SINGANPOKIA	F	5TH	ENGLISH		3	9537444988
190	BHUMI SOLANKI	F	5TH	ENGLISH	9/2/2008	3	7562569084
191	PRACHI RIJHUWANI	F	5TH	ENGLISH	2/23/2008	3	9825161224
192	GAZI ANAM	F	5TH	ENGLISH	12/13/2007	3	9374040407
193	LENWALA ASTHA	F	5TH	ENGLISH	2/22/2007	3	9016249381
194	MEHTA JATVARHTI	F	5TH	ENGLISH	10/12/2007	3	9825335849
195	MEHTA JAINY	F	5TH	ENGLISH	11/16/2007	3	9979957283
196	MEHTA NETRA	F	5TH	ENGLISH	10/16/2010	3	8000779997
197	SHAH NISHVI	F	6TH	ENGLISH	8/31/2006	3	9898517097
198	KRISHNA BARAJIYA	F	6TH	ENGLISH	10/14/2006	3	9099618183
199	PALAK SOLANKI	F	6TH	ENGLISH	5/25/2005	3	9725722026
200	SNEHA GANPTLAL	F	6TH	ENGLISH	4/14/2007	3	9725296690
201	KHADIJA PANWALA	F	6TH	ENGLISH	12/20/2006	3	9898369792
202	RIYA NAYAK	F	6TH	ENGLISH	7/30/2006	3	9925307638
203	MANTASHA	F	6TH	ENGLISH	7/12/2006	3	9925409422
204	JANVI BHATIYA	F	6TH	ENGLISH	5/8/2007	3	8905002125
205	KHUSHI JAIN	F	6TH	ENGLISH	2/23/2007	3	9377483000
206	DEEPIKA CHITYALA	F	6TH	ENGLISH	4/25/2006	3	9409517133
207	VANSHIKA RANA	F	3RD	GUJARATI	11/4/2009	3	87582656776
208	NISHTHA MISTRY	F	3RD	GUJARATI	7/16/2007	3	9898884204
209	SNEHAL CHAUHAN	F	3RD	GUJARATI		3	9998127192
210	FAEZABANU GADIWALA	F	3RD	GUJARATI		3	992403530
211	NAITRI PATEL	F	3RD	GUJARATI		3	
212	GRESI NATALI	F	3RD	GUJARATI		3	8866320207
213	NIDAFATEMA MORISWALA	F	3RD	GUJARATI		3	8401272315
214	TISHA KAHAR	F	3RD	GUJARATI		3	208928106
215	DHRUVI SAINI	F	3RD	GUJARATI		3	
216	HARDI PATEL	F	3RD	GUJARATI		3	9909405017
217	SWATI PATEL	F	3RD	GUJARATI	10/29/2009	3	9979100326

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
218	PATIL AAYUSHI	F	3RD	GUJARATI		3	
219	DRASHTI RANA	F	3RD	GUJARATI		3	9998787014
220	VIDHI PATEL	F	3RD	GUJARATI	12/2/2006	3	9468649624
221	NIKITA RANA	F	3RD	GUJARATI		3	
222	DEVIKA TOPLIWALA	F	3RD	GUJARATI	4/13/2011	3	
223	POOJA RANA	F	3RD	GUJARATI	2/4/2010	3	9825572898
224	SRUSTI AAHIR	F	3RD	GUJARATI		3	9033094050
225	NENSY DESAI	F	3RD	GUJARATI		3	9712551212
226	DIXSHITA FADIYA	F	3RD	GUJARATI	6/2/2006	3	9879890573
227	KINJAL SOLANKI	F	3RD	GUJARATI		3	
228	ROSHNI SANGANI	F	3RD	GUJARATI		3	
229	NIDHI JARIWALA	F	3RD	GUJARATI		3	
230	MAYURI KAMLE	F	3RD	GUJARATI		3	9979980983
231	NISHTHA AAYRE	F	3RD	GUJARATI		3	9924508959
232	PRIYNSHI RANA	F	3RD	GUJARATI		3	9879050469
233	FORAM MALI	F	3RD	GUJARATI		3	
234	TWARA PATEL	F	3RD	GUJARATI		3	
235	JASHMI RANA	F	4TH	GUJARATI		3	9725157658
236	VAISHNAVI RANA	F	4TH	GUJARATI		3	8980385396
237	KAVYA THAKOR	F	4TH	GUJARATI	8/5/2008	3	9925112730
238	KASHVI PARMAR	F	4TH	GUJARATI		3	
239	VRUNDA GAYWALA	F	4TH	GUJARATI		3	8469223418
240	HETAL SENVA	F	4TH	GUJARATI		3	9904210033
241	NAMRTA HANDA	F	4TH	GUJARATI	18-Feb	3	9574649512
242	VISHWA PANDYA	F	4TH	GUJARATI		3	9099721789
243	SAMIKSHA VAGHELA	F	4TH	GUJARATI		3	
244	KRISHA PATEL	F	4TH	GUJARATI		3	7567045718
245	RIDDHI VAGHELA	F	4TH	GUJARATI	2/15/2009	3	9157140930
246	FREYA DESAI	F	4TH	GUJARATI	9/9/2009	3	
247	AARYA SANGHVI	F	4TH	GUJARATI		3	9825684582
248	NIKISHA RANA	F	4TH	GUJARATI		3	
249	URVI MEVADA	F	4TH	GUJARATI	3/4/2009	3	9726305224
250	SNEHA NAKUM	F	4TH	GUJARATI		3	9825108190
251	URVSHI BAJAD	F	4TH	GUJARATI		3	9801879175
252	NEHA PATEL	F	4TH	GUJARATI		3	9913315007
253	HARDI PATEL	F	4TH	GUJARATI		3	
254	ZIYA MULTANI	F	4TH	GUJARATI		3	9898732401
255	MUGDHA MAJIWALA	F	5TH	GUJARATI		3	9173179790

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
256	FENI RANA	F	5TH	GUJARATI	7/25/2009	3	
257	KHUSHVI MEHTA	F	5TH	GUJARATI	23-062008	3	9377132435
258	VAISHALI RATHOD	F	5TH	GUJARATI	1/26/2005	3	9904310033
259	PRIANSHI RATHOD	F	5TH	GUJARATI		3	
260	PRIYANSHI SHINDE	F	5TH	GUJARATI	12-06-	3	9909666727
261	SHRUSHTI TAMAKUWALA	F	5TH	GUJARATI	6/23/2008	3	9426830001
262	SHAILI NAYKA	F	5TH	GUJARATI	5/28/2008	3	9898172140
263	PRIYANSHI DUDHWALA	F	5TH	GUJARATI	12/5/2007	3	
264	ANJALI NAYKA	F	5TH	GUJARATI		3	
265	TANISHA TIWARI	F	5TH	GUJARATI	11/10/2007	3	81010133
266	RIDDHI MURTIWALA	F	5TH	GUJARATI	2/1/2008	3	9228888310
267	TANVI NAYKA	F	5TH	GUJARATI		3	
268	AARCHI PATEL	F	5TH	GUJARATI		3	9825711220
269	PRIYANSHI PATEL	F	5TH	GUJARATI		3	9638613586
270	ROSHNI PATEL	F	5TH	GUJARATI		3	9737527818
271	PRTHA PATEL	F	5TH	GUJARATI		3	9909405017
272	JENSI LUHAR	F	5TH	GUJARATI	6/23/2008	3	7568186412
273	VIDHI JARIWALA	F	5TH	GUJARATI	9/4/2007	3	7096101819
274	noopur gowswami	F	5TH	GUJARATI	3/26/2007	3	9913264433
275	PRACHI JARIWALA	F	5TH	GUJARATI	13-07-	3	
276	KHUSHI RANA	F	5TH	GUJARATI	4/28/2007	3	9904172390
277	MAITRI MADHAV	F	5TH	GUJARATI	3/23/2008	3	992551900
278	BHUMI JARIWALA	F	5TH	GUJARATI		3	9979616136
279	POOJA SOLANKI	F	5TH	GUJARATI		3	
280	ROSHNI CHAUDHARY	F	5TH	GUJARATI		3	8780808018
281	RAGINI RAY	F	5TH	GUJARATI	12/17/2007	3	9426859617
282	HESHA DESAI	F	6TH	GUJARATI	3/29/2007	3	8866269549
283	ABHILASHA MENIYA	F	6TH	GUJARATI	7/7/2007	3	9925895323
284	DRASHTI ARYA	F	6TH	GUJARATI	4/20/2006	3	8758139237
285	POOJA RIBINWALA	F	6TH	GUJARATI	7/20/2007	3	
286	KHYATI PATEL	F	6TH	GUJARATI	12/23/2006	3	9825054399
287	PALAK AHIRE	F	6TH	GUJARATI	11/16/2006	3	9377482138
288	ROHINI CHAUDHARY	F	6TH	GUJARATI	5/2/2007	3	9601852340
289	URVI PATEL	F	6TH	GUJARATI	12/5/2006	3	9913315007
290	PRACHI SOLANKI	F	6TH	GUJARATI	6/23/2007	3	9824644689

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
291	KHUSHI TIJWIJ	F	6TH	GUJARATI	12/23/2006	3	
292	TISHA PATEL	F	6TH	GUJARATI	10/22/2006	3	9913519906
293	SNEHA KANGRIWALA	F	6TH	GUJARATI	5/11/2007	3	9284057840
294	KHUSHI LIMBACHYA	F	6TH	GUJARATI		3	9624084654
295	SIDDHI GAJJAR	F	6TH	GUJARATI	7/18/2007	3	9825352005
296	KHUSHI RATHOD	F	6TH	GUJARATI	9/11/2006	3	9898445378
297	DINKI RANA	F	6TH	GUJARATI	9/18/2006	3	9825076755
298	HERINA MISTRY	F	6TH	GUJARATI	2/2/2007	3	9376266940
299	RISHIKA LUHAR	F	6TH	GUJARATI		3	9879655738
300	AASHI LUHAR	F	7TH	GUJARATI		3	9879655738
301	PRANJAL PATEL	F	7TH	GUJARATI		3	8128832393
302	preksha Chauhan	f	6TH	ENGLISH	3/12/2009	3	9998962555
303	TEJASVI PATEL	f	5TH	GUJARATI		3	
304	NAYKA KHUSHI	f	5TH	GUJARATI		3	
305	RANA SNEHA	f	5TH	GUJARATI		3	
306	RATHOD KASHISH	f	5TH	GUJARATI		3	
307	SRUSHTI TAMAKUWALA	f	5TH	GUJARATI		3	
308	Palak Agarwal	F	7th	ENGLISH	4/22/2005	3	9376134624
309	Vatsal Thummar	M	3RD	GUJARATI	09-10-	4	
310	NIRMAL ROKHDA	M	3RD	GUJARATI		4	9824895758
311	HET BHESAGIYA	M	3RD	GUJARATI	2-Jul	4	9925183726
312	VAIDIK HADIYA	M	3RD	GUJARATI	11-Mar	4	
313	NAMAN LATHIYA	M	3RD	GUJARATI	6/6/2009	4	9228471180
314	VINIT SIDHPARA	M	3RD	GUJARATI	20-09-	4	9978918000
315	KRUTGNA SOJITRA	M	3RD	GUJARATI	26-05-	4	
316	YUG SAVALIYA	M	3RD	GUJARATI		4	9824372803
317	YASH PATEL	M	3RD	GUJARATI	21-06-	4	8140155887
318	AARYAN SUTARIYA	M	3RD	GUJARATI	9/8/2007	4	9879745145
319	JAINAM VADHER	M	3RD	GUJARATI	5-Apr	4	9925887874
320	DARSH SANGHANI	M	3RD	GUJARATI		4	9726572109
321	VINIT KATHIRIYA	M	3RD	GUJARATI	6/21/2009	4	9909095245
322	RAMIL KANANI	M	3RD	GUJARATI	5/9/2010	4	9925727369
323	TRUSHIN DESAI	M	3RD	GUJARATI	12/23/2009	4	9426883401
324	RUDRA KATARIYA	M	3RD	GUJARATI	9-01-	4	
325	YUG SAVSANI	M	3RD	GUJARATI	27-08-	4	9898242572
326	SHUBHAM KATHIRYA	M	3RD	GUJARATI		4	9099102092
327	DARSHIT BHANT	M	3RD	GUJARATI	1/22/2010	4	9879408539

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
328	HEMANT TAKANI	M	3RD	GUJARATI		4	
329	PRIY AJUDIYA	M	3RD	GUJARATI	3/31/2010	4	9979483313
330	KRISH CHAVDA	M	3RD	GUJARATI		4	
331	VED SAVALIYA	M	3RD	GUJARATI	12/3/2009	4	
332	NIHAR DUDHAT	M	3RD	GUJARATI	5-08-	4	9909742417
333	KENIL SAVALIYA	M	4TH	GUJARATI	8/26/2008	4	9979275686
334	TARANG GOHIL	M	4TH	GUJARATI	12/22/2008	4	9099124925
335	MADHAV KISHORBHAI	M	4TH	GUJARATI	9/27/2008	4	9825143737
336	KRISH PANELIYA	M	4TH	GUJARATI	12/13/2008	4	9824541868
337	TEJ RANPARIYA	M	4TH	GUJARATI	3/26/2008	4	9925135824
338	SAVAN BHAISAGAR	M	4TH	GUJARATI	4/22/2009	4	9714216590
339	CHAITNYA KARAD	M	4TH	GUJARATI	9/16/2008	4	9377765910
340	CHETAN THUMAR	M	4TH	GUJARATI	12/13/2007	4	9925906859
341	JYOT VARIYA	M	4TH	GUJARATI	12/29/2008	4	8000064050
342	DAKSH SHELDIYA	M	4TH	GUJARATI	10/14/2008	4	9825506694
343	FENIL BHAIVIRAD	M	4TH	GUJARATI	5/24/2008	4	942805141
344	ROMIT KACHADIYA	M	4TH	GUJARATI	1/10/2008	4	9624080141
345	MEET SAVALIYA	M	4TH	GUJARATI	10/24/2008	4	9925627039
346	PRATHAM KATHROTIYA	M	4TH	GUJARATI	6-05-	4	7383680230
347	VRAJ BHAIMADAK	M	4TH	GUJARATI	5/25/2009	4	924953148
348	SHUBHAM VAVIYA	M	4TH	GUJARATI	12/8/2008	4	9924614940
349	PARTH	M	4TH	GUJARATI	2/24/2008	4	9099561083
350	MEET KAKADIYA	M	4TH	GUJARATI	7/3/2009	4	7569424440
351	DAKSH RACHDIYA	M	4TH	GUJARATI	2/7/2004	4	9978253045
352	PANTH GAGANI	M	4TH	GUJARATI	10/26/2008	4	9016402972
353	BHARGAV PARTODIYA	M	4TH	GUJARATI	9/9/2008	4	9924622554
354	JAINIL MANIYA	M	4TH	GUJARATI	5/17/2009	4	9033529033
355	KISHAN VAGHELA	M	4TH	GUJARATI	1/21/2008	4	9879836117
356	VASUDEV SADANI	M	4TH	GUJARATI	3/3/2009	4	9773903857
357	VANSH VAMJA	M	4TH	GUJARATI	2/4/2009	4	9409042040
358	SHUBH GORSIP	M	5TH	GUJARATI	9/24/2007	4	9687652503
359	JIGAR PADSHALA	M	5TH	GUJARATI	5/10/2007	4	7405409204
360	KUNJ PARMAR	M	5TH	GUJARATI	4/11/2008	4	8511645011
361	CHINTAN CHOTHANI	M	5TH	GUJARATI	5/30/2008	4	9510617171
362	JIT SUVANIYA	M	5TH	GUJARATI	4/28/2008	4	9525110535

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
363	DIVY DESAI	M	5TH	GUJARATI	12/18/2007	4	9687249980
364	PRINCE PATEL	M	5TH	GUJARATI	14-09-	4	9687092137
365	ISH RAKHOLIYA	M	5TH	GUJARATI	10/27/2007	4	7567919650
366	AALOK PATEL	M	5TH	GUJARATI	3/11/2008	4	8141338844
367	RUDRA PATOLIYA	M	5TH	GUJARATI	19-May	4	9825354759
368	DHURV PIPALIYA	M	5TH	GUJARATI	6/19/2008	4	9879540133
369	PRIYANSHU PATEL	M	5TH	GUJARATI	12/31/2007	4	9376941737
370	OM CHOTATIYA	M	5TH	GUJARATI	2/13/2008	4	9925707332
371	JIT SABHAYA	M	5TH	GUJARATI	3/5/2007	4	9974150512
372	YASH GODALIYA	M	5TH	GUJARATI	8/22/2007	4	9998868200
373	PRIYANK GONDALIYA	M	5TH	GUJARATI	8/17/2007	4	9825440508
374	RUDRA LAD	M	5TH	GUJARATI	12/16/2006	4	9979732104
375	VARUN VAGH	M	5TH	GUJARATI	7/11/2009	4	9998799130
376	SIDDH BHALANI	M	5TH	GUJARATI	7/28/2007	4	9909433277
377	PARSHIL KATHARIYA	M	5TH	GUJARATI	2/25/2008	4	9375555025
378	MEET BALIYA	M	5TH	GUJARATI	12/1/2007	4	9427968967
379	JENISH SURANI	M	5TH	GUJARATI	12/22/2007	4	9426830544
380	PRABHAV DESAI	M	5TH	GUJARATI	3/23/2007	4	9825510079
381	NIRAJ DIVEYA	M	5TH	GUJARATI	7/25/2007	4	9898801521
382	DEVANSH MANGUKIYA	M	5TH	GUJARATI	11/20/2007	4	9825433376
383	HARIKRISHAN	M	5TH	GUJARATI		4	9925191007
384	RUDRA DHAMELIYA	M	6TH	GUJARATI	12/17/2006	4	9925376872
385	PRASANG VAGHASIYA	M	6TH	GUJARATI	10/4/2005	4	9662026853
386	VEDANT	M	6TH	GUJARATI	4/19/2007	4	9898382853
387	YAKSH PATEL	M	6TH	GUJARATI	12/19/2006	4	9327454144
388	RUT THESIYA	M	6TH	GUJARATI	4/3/2007	4	9879230730
389	DARSH JIVANI	M	6TH	GUJARATI	11/3/2006	4	9879093736
390	VAIDIK GODANI	M	6TH	GUJARATI	12/31/2006	4	9925625484
391	BHAUMIK NASIT	M	6TH	GUJARATI	6/3/2007	4	968744547
392	PARTH BHADKAN	M	6TH	GUJARATI	12/14/2006	4	9924372152
393	SHYAM GEDIYA	M	6TH	GUJARATI	12/26/2006	4	9825991618
394	SMIT BHUVA	M	6TH	GUJARATI	11/1/2006	4	9974781097
395	UTTAM KALTHIYA	M	6TH	GUJARATI	11/6/2006	4	8000377175
396	NAKUL BHARVAD	M	6TH	GUJARATI	8/4/2006	4	9824084073
397	ARPIT TANK	M	6TH	GUJARATI	11/5/2006	4	9924800747
398	ZEEL SANEPARA	M	6TH	GUJARATI	8/3/2007	4	9925557750
399	DHVIT KUMBAR	M	6TH	GUJARATI	9/24/2007	4	9714413816

Sr. No	Name	Sex	Class	Med.	D.O.B.	School	Mobile No.
400	MOHIT DHAMELIYA	M	6TH	GUJARATI	11/13/2006	4	9228256391
401	AAYUSH SUKHANDIYA	M	6TH	GUJARATI	11/6/2006	4	9909409180
402	KRISH SAVALIYA	M	6TH	GUJARATI	6/26/2006	4	9825948009
403	TIRTH DHANANI	M	6TH	GUJARATI	12/15/2006	4	9737118001
404	KRUTIK SHELDIYA	M	6TH	GUJARATI	9/16/2006	4	9825510240
405	CHETAN SHAH	M	6TH	GUJARATI	6/21/2006	4	9898040840
406	YAKSH VAMJA	M	6TH	GUJARATI	6/28/2007	4	8866961741
407	MANAV CHALODIYA	M	6TH	GUJARATI	12/12/2006	4	9824880552
408	KENIL KAKDIYA	M	6TH	GUJARATI	9/15/2006	4	9724024510
409	Madhav Dhamasaniya	M	3rd	GUJARATI		4	

: The End :