UNIT 3   CHILDREN WITH NEURO DEVELOPMENTAL DISABILITIES

3.1   INTRODUCTION

Neuro developmental disabilities are a group of disabilities in which the development of central nervous system is impaired. As a student teacher, it is essential for you to understand the nature and needs of different neuro developmental disorders to plan and implement educational programmes. Here, in this unit, we will discuss three main neurodevelopment disabilities namely, Mental Retardation (MR), currently known as Intellectual Disability (ID), Specific Learning Disability (SLD) and Autism Spectrum Disorders (ASD). These disabilities typically manifest early in development, often before the child enters preschool. Though all the three types of disabilities are grouped under neurodevelopment disabilities and most of the causes are similar, they differ in their symptoms, characteristics and educational needs. In this unit, we will discuss the characteristics, types, assessment procedure and the educational intervention of each disability in detail.

3.2   OBJECTIVES

On completion of this unit you will be able to

● Demonstrate understanding of the nature and needs of Neuro Developmental Disabilities.

● Elaborate the characteristics of persons with Intellectual Disability (ID), Specific Learning Disability (SLD) and Autism Spectrum Disorder(ASD)

● Describe the causes and prevalence of ID, SLD and ASD.

● Discuss the different types of ID, SLD and ASD

● Demonstrate understanding of educational considerations of persons with ID, SLD and ASD

3.3   INTELLECTUAL DISABILITY: NATURE, NEEDS, ASSESSMENT AND INTERVENTION

Intellectual Disability (ID) is a life - long condition, which is marked by some insult to the brain resulting in low intelligence. Intellectual Disability cannot be cured. Persons with Intellectual Disability possess the ability to be trained with systematic and planned support to become independent. Intellectual Disability is not Mental

illness. Mental illness can be cured. Persons with Mental Illness have normal milestones of development but suffer from psychological disturbance which needs systematic treatment, sometimes, medication, whereas Intellectual Disability is a condition when child's mental development does not match with his chronological age. For example - an eight-year-old child with ID may have mental ability and behaviour like that of a child much younger. Depending on the severity of the condition, the mental ability may vary ranging from that of a child who is a few months to close to six years.

Definition

Internationally the definition of Intellectual disability has moved away from medical model to rehabilitative model. Current trend is to describe the condition by using functional and educational terms rather than clinical terms. Some of the recent definitions are listed below: According to American Association on Intellectual and Developmental Disabilities (AAIDD) 2010 earlier known as AAMR, Intellectual disability is a condition characterized by significant limitations both in intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills. This disability originates before the age of 18.

International Statistical Classification of Diseases and Related Health Problems (ICD-10). The WHO ICD-10 defines mental retardation as: a condition of arrested or incomplete development of the mind, which is especially characterised by impairment of skills manifested during the developmental period, skills which contribute to the overall level of intelligence, i.e. cognitive, language, motor, and social abilities.

The ICD-11 working group proposes replacing mental retardation with intellectual developmental disorders (IDDs), a term it defines as 'a group of developmental conditions characterized by significant impairment of cognitive functions, which are associated with limitations of learning, adaptive behavior and skills the new term proposed for DSM-5 is Intellectual Disability (ID)/IDD (Salvador, Reed, Vaez, 2011)

In India, the Rights of Persons with Disabilities Act, 2016 defines Intellectual disability, as a condition characterised by significant limitation both in intellectual functioning (reasoning, learning, problem solving) and in adaptive behaviour which covers a range of every day, social and practical skills.

Intellectual Functioning

Intellectual functioning-also called intelligence-refers to general mental capacity, such as learning, reasoning, problem solving, and so on.

One way to measure intellectual functioning is an IQ test. Generally, an IQ test score of around 70 or as high as 75 indicates a limitation in intellectual functioning.

Adaptive Behaviour

Adaptive behavior is the collection of conceptual, social, and practical skills that are learned and performed by people in their everyday lives.

- Conceptual skills-language and literacy; money, time, and number concepts; and self-direction.

- Social skills-interpersonal skills, social responsibility, self-esteem, gullibility, social problem solving, and the ability to follow rules/obey laws and to avoid being victimized.

- Practical skills-activities of daily living (personal care), occupational skills, healthcare, travel/transportation, schedules/routines, safety, use of money, use of the telephone.

Standardized tests can also determine limitations in adaptive behavior.

Age of Onset

This condition is one of several developmental disabilities-that is, there is evidence of the disability during the developmental period, which in the US is operationalized as before the age of 18.

Additional Considerations

But in defining and assessing intellectual disability, the AAIDD stresses that additional factors must be considered, such as the community environment typical of the individual's peers and culture. Professionals should also consider linguistic diversity and cultural differences in the way people communicate, move, and behave.

Finally, assessments must also assume that limitations in individuals often coexist with strengths, and that a person's level of life functioning will improve if appropriate personalized supports are provided over a sustained period.

Only based on such many-sided evaluations can professionals determine whether an individual has intellectual disability and tailor individualized support plans.

Source: http://aaidd.org/intellectual-disability/definition accessed on 29.5.2016

Prevalence and Causes of Intellectual Disability

The prevalence of intellectual disabilities in India is not well known. India has the world's largest children population who are at higher risk of developmental disabilities.

The prevalence of ID in India varies by age, gender, population-type, and place of residence. These demographic and geographic factors influence awareness of ID, its prevention, health care, and rehabilitation services, which further impact its incidence and prevalence. The cumulative prevalence of ID in the overall population was found to be 10.5 cases/1000, Lakhan, Ekúndayò, Shahbazi (2015)

The aetiologies of ID are multiple, and prevalence can also be influenced by social, economic, cultural, racial/ethnic, and other environmental factors including the demographics of age and gender. However, epidemiological studies assessing these relationships are scarce. Approximately 3% (Flint et al., 1995). of the population has an Intelligence Quotient (IQ) of less than 70, among whom a cause for mental retardation can be established in less than half of all. Many environmental, genetic or multiple factors can cause intellectual disability. It is also believed that behavioural or societal factors such as poverty, malnutrition, maternal drug and alcohol use, as well as severe stimulus deprivation can contribute to ID. Unfortunately, in approximately 30 to 50 percent of cases; the aetiology is not identified even after thorough diagnostic evaluation. Some persons have a congenital malformation of the brain; others have damage to the brain at a critical period during pre- or postnatal development. Acquired causes of retardation include traumatic brain injury and damage to central nervous system.

The following are the causes of ID

1.   Genetic conditions

2.   Prenatal problems

3.   Perinatal problems

4.   Postnatal problems (in infancy and childhood)

5.   Metabolic disorders

6.   Exposure to certain types of disease or toxins.

7.   Iodine deficiency (cretinism)

8.   Malnutrition.

Types and Characteristics of Persons with Intellectual Disability

● **Educational Classification**

In early years those with MR/ID used to be judged by their ability level based on IQ as :

Educable Mental Retardation (EMR): (IQ 50-69).

Trainable Mental Retardation (TMR) (IQ 35 -50)

Custodial Mental Retardation (CMR) (IQ below 25)

Such classification is NOT in use currently. The children in school are grouped as

● Pre-primary (up to 6 years),

● Primary (7 to 10or11years,)

● Secondary (11 to 15 years)

● Prevocational (16 to 18 years).

Based on the potentials and abilities these children study in regular schools with or without resource support or in special schools. Thus, the classification in educational settings has changed from IQ based grouping to age based, inclusion oriented grouping as done in regular schools.

● **Medical Classification**

This type of classification is related to causality or medical diagnosis associated with intellectual disability

● Infections and intoxications:

● Trauma or physical agent:

● Metabolism or Nutrition:

● Gross Brain Disease(Post-natal):

● Unknown Prenatal Influence:

  - Chromosomal Abnormality: (Down's syndrome is an autosomal disorder ,Trisomy 21,Translocation,Mosaicism,Abnormalities in sex chromosomes, Klinefelter's syndrome Turner's syndrome)

- Gestational Disorder

- Psychiatric Disorders:

- Environmental influence:

Children with intellectual disability have skill deficits which are manifested corresponding to the severity and level of intellectual disability. Severity refers to the degree of damage to the brain and level refers to the level of potential a person with intellectual disability has for learning from training and support. Severity demonstrates limitations due to extent of brain damage and a clinical description to explain deficits in expected development.

The main characteristics of children with intellectual disability are as follows:

Physical Characteristics

- Microcephaly - abnormally small head

- Hydrocephaly- abnormally large head filled with cerebrospinal fluid

- Down's syndrome - may have thick fingers, moon shaped eyes, short nose, uncovered mouth.

- Cretinism - dwarf-like, coarse and thick skin, short and stubby extremities, thick eyelids, sleepy appearance

- Physical developments at a slower rate

- May manifest acute or chronic health problem

Mental /Intellectual/Cognitive Characteristics

- Short attention span

- Poor judgment

- Poor reasoning and understanding

- Slow in learning

- Poor listening, thinking skills

- Poor at abstraction

- Poor memory

- Lack of motivation

- Lack of creativity

- Slow reaction

- Absence of clarity

- Poor eye - hand coordination

Behavioural Characteristics

- Maladaptive

- Repetitive

- Age inappropriate

- Limited social skills - immaturity in different social situations

- Difficulty in comprehending social situations

- Low frustration tolerance

- Poor self-concept(self-image) Lack of self confidence

- Exhibit restlessness

Academic Characteristics

- Sub average learning and performance in basic academic skills (such as reading, writing and arithmetic)

- Difficulty in activities requiring reading and listening comprehension

- Oral communication skills generally exceed written communication skills

- Limited in incidental learning acquired through experience

Communication Characteristics

- Display limited vocabulary

- Delayed in speech and language development

- Displays articulation disorders

- Limited written communication skills

- Slow processing of questions often resulting in delayed responses

- Poor speech

- Problems in understanding multiple instructions

- Unusual voice

Remember, not all children will have all characteristics listed above. Many have most of the characteristics based on the extent of damage to the brain and the severity of the condition.

Assessment

Assessment for persons with intellectual disabilityand associated conditions needs a multidimensional approach from an interdisciplinary team of experts. Assessment of adaptive behaviour, which distinguishes a person with intellectual disability from others, has become a key component. Since many persons with intellectual disability also have associated problems, the expertise of several professionals consisting of a multidisciplinary team is necessary to provide effective programs. The special educator plays a pivotal role. The most commonly involved members include special educator, psychologist, physiotherapist, occupational therapist, speech therapist, social worker and paediatrician/psychiatrist.

For an appropriate Individualized Program Planning, accurate and comprehensive information of the individual is essential. For this purpose, a standard assessment tool is necessary. Systematic assessment of current level of functioning of a child provides information about his strengths, abilities and developmental needs. This forms the basis for educational programming. Generally, a comprehensive assessment of persons with intellectual disability includes intelligence, personality, education, social achievement, special abilities and aptitudes. Primary assessment includes

recording of case history, physical examination of the child, preschool assessment, school learning and post-school adjustment. Common tools for special educational assessment used in India for children with Intellectual Disability are as follows;

Madras Developmental Programming System (MDPS), Jayachandran, Vimala (1975).

The scale consists of 360 observable and measurable items. Grouped under 18 functional domains, such as gross motor, fine motor, eating, dressing, grooming, toileting, receptive and expressive language, social interaction, reading, writing, numbers, time money, domestic behavior, community orientation, recreation and leisure time activities, vocational activities.

Upanayan Developmental Programming System (UDPS) for Children with Mental Retardation (Madhuram Narayan Centre for Exceptional Children, Madras), 1987

It is comprehensive, covering the management of children with mental retardation in the agree group of 0-2 years and 2-6 years to meet a 'felt need' for systematic training. Appropriate to Indian conditions and suited to the cultural milieu.

Behavioural Assessment Scale for Indian Children with Mental Retardation (BASIC-MR) - Peshavaria and Venkatesan, NIMH, 1992

Though designed to elicit systematic information on the current level of behavior in school going children with mental retardation, in age group 3 to 16 (or 18) years, the teacher may find the scale useful even for older individuals with severe retardation. Relevant for behavioral assessment, the scale, field tested on a select sample, can also be used as a curriculum guide for program planning and training based on the individual needs.

Functional Assessment Checklist for Programming, Narayan, Myreddi, Rao & Rajagopal, NIMH (1990)

Each of the seven checklists is addressed to various levels of the child's functioning, namely, pre-primary, primary-I, primary-II, secondary pre-vocational-I, pre-vocational-II and care group.

Instruction

The trend of educating students with mild/moderate intellectual disability is changing. Traditionally the students with mild/moderate intellectual disability were educated in special schools. Today increasing number of students are included in regular schools with supplemental instruction provided by a resource teacher or a special educator.

Simply placing the students into general education class does not mean that the student will be successful. Systematically planning the student's inclusion into the classroom through team activity, group projects and directly training all students in specific skill for interaction with one another are some of the methods that help successful inclusion. The self-contained special education classroom is the most common educational placement for students with severe-profound mental retardation, although the trend is changing, and more students are placed in the general education setting for a portion of their school day.

Over the years, the government has launched various programmes and schemes to meet its commitments towards the education of children with disabilities. Among the first of these efforts was the Project Integrated Education of the Disabled Children (PIED) launched in 1987 in collaboration with UNICEF. Taking note of the outcomes

and recommendations of the PIED, the Integrated Education for Disabled Children (IEDC) scheme, which was initially launched in 1974, was subsequently revised in 1992. With India becoming signatory to the Salamanca Statement (UNESCO, 1994), the 1990s saw the rapid incorporation of the term 'inclusive education' in various official documents, reports published by institutions such as the NCERT and media.

The Sarva Siksha Abhiyan, SSA thus extends the dual approach historically adopted towards the education of children with disabilities, by propagating a "multi-optional delivery system". It categorically brings the concerns of children with disabilities, or those it terms as "children with special needs (CWSN) under the framework of "inclusive education" (IE): SSA will ensure that every child with special needs, irrespective of the kind, category and degree of disability, is provided education in an appropriate environment. SSA will adopt 'zero rejection' policy so that no child is left out of the education system. (SSA, 2007:1) SSA further extends the range of options from special and mainstream/ 'regular' schools to Education Guarantee Scheme/Alternative and Innovative Education (EGS/AIE) and Home-Based Education (HBE).

Developing functional curriculum goals for these students is the primary intent for most educators. Curriculum choices include developing goals around the domains that represent the living environment of the student with ID. Including work, play, and involvement in the community. Personal maintenance and development, homemaking, community life, vocation, and leisure and travel are the five domains on which many curricula for students with intellectual disability are based. Related annual goals may be grouped under broad categories called "Teaching goals"

The teaching goals can be grouped as follows;

- Language skills

- Thinking and Reasoning skills

- Motor skills

- Self-awareness skill

- Social awareness skills

- Discovery of maths, science, computer

- Sensory motor

- Creative arts

One effective technique to use with students with severe-profound mental retardation is task analysis. This is a method in which activities are broken down and sequenced as a series of small subtasks. The small, easier subtasks enable the student to learn more easily. The subtasks are sequenced in the natural order in which they are performed. The curriculum stresses function, communication, and self-help skills. If students are provided with practice and repeated opportunities to respond as well as positive reinforcement for appropriate behavior, they are more likely to be successful.

Promoting Inclusive Practices

The key to including students with intellectual disabilities in the general education classroom is providing necessary and appropriate supports. These include personal supports (e.g., self-regulation, academic skills), natural supports (e.g., parents, friends), support services (e.g., specialized instruction), and technical supports (e.g.,

assistive technology). A focus on the concept of supported education, as a necessary complement to inclusion, assumes that individuals should be educated in inclusive classroom settings to the maximum degree possible and supported in those settings to ensure successful learning.

There has been a tendency simply to physically place students with ID in the general education classroom. Inclusion should focus on welcoming and involving students with disabilities in the general education classroom. Merely placing students with ID in general education without active classroom participation will be unlikely to result in positive gains for students.

Specific adaptations can enhance learning and increase relevance. Assistive technology can further enhance classroom adaptations. Students with ID can benefit from a variety of technological applications. The key concern is that technology be used in a way that effectively enhances learning through conscious attention to the use of technology for each of the following four respective stages of learning:

- acquisition of new skills,

- development of fluency and proficiency,

- maintenance of skills over time,

- generalization of skills learned to other settings, including beyond the school and into the community.

When these characteristics are considered collectively, certain core instructional themes emerge.

Teachers should focus on teaching and learning adaptations that:

- Ensure attention to relevant task demands

- Teach ways to learn content while teaching content itself

- Focus on content that is meaningful to students, to promote learning and facilitate application

- Provide training that crosses multiple learning and environmental contexts

- Offer opportunities for active involvement in the learning process

AREA	POTENTIAL DIFFICULTIES	EDUCATIONAL IMPLICATIONS
Attention	Attention span (length of time on task) Focus (inhibition of distracting stimuli) Selective attention (discrimination of important stimulus characteristics)	• Train students to be aware of the importance of attention. • Teach students how to actively self-monitor their attention. • Highlight salient cues in instruction
Metacognition	Metacognition: thinking about thinking Production of strategies to assist learning Organizing additional information	• Teach specific strategies (rehearsal, labeling, chunking) • Involve students in active learning process (practice, apply, review). • Stress meaningful content.

Memory	Short-term memory-common deficit area Long-term memory-usually more like that of people who are not disabled (once information has been learned)	• Strategy production is difficult; hence students need to be shown how to use strategies to proceed in an organized, well planned manner. • Stress meaningful content.
Generalization Learning	Applying knowledge of skills to new tasks, or situations Using previous experience to formulate rules that will help solve problems of similar nature	• Teach multiple contexts. • Reinforce generalization • Teach skills in relevant contexts. • Remind students to apply what they have learned.
Motivational Considerations	External locus of control (attributing events to others' influence) Outer directedness (in learning style) Low expectations by others Failure set (personal expectancy of failure)	• Create environment focused on success opportunities • Emphasize self-reliance • Promote self-management • Teach learning strategies for academic tasks • Focus on learning to learn. • Encourage problem solving strategies
Cognitive Development	Abilities to engage in abstract thinking Symbolic thought, as exemplified by introspection and developing hypotheses	• Provide concrete examples in instruction. • Provide contextual learning experiences. • Encourage active interaction between student and the environment
Language Development	Difficulty with receptive and expressive language Delayed acquisition of vocabulary and language rules Articulation of thoughts and feelings Possible interaction of cultural variance and language dialects	• Create Environment that encourages verbal communication. • Encourage expression of thoughts • Provide appropriate language models. • Provide opportunities for students to learn language for varied purposes and with different audiences.

Academic Development	Delayed acquisition of reading, writing and mathematical skills Decoding of text Reading comprehension Math computation Problem solving in mathematics Self-directed expressive writing	• Use learning strategies to promote effective studying • Teach sight words including functional applications. • Teach strategies for decoding unknown words. • Provide strategies to promote reading comprehension and math problem solving • Develop functional writing skills • Adapt curriculum to promote success
Social Behavioral Interactions	Classroom behavior Peer acceptance Displaying emotions appropriately	• Promote social competence through direct instruction of skills • Reinforce appropriate behaviors • Seek self-understanding of reasons for inappropriate behavior. • Teach self-management, self-control
Social Responding	Social Perception Gullibility Suggestibility	• Involve peers as classroom role models • Provide a support system of peers for positive guidance "buddy system" • Teach resistance to social manipulation • Teach Miranda rights in the legal system

Source: Adapted from Polloway, Patton, & Nelson, 2011

Activities for Practice I

1. Visit a special school and observe and write down the common characteristics of children with mental Retardation.

2. Prepare a list of teaching and learning adaptation for children with intellectual disability.

Check Your Progress 1

Notes: a) Write your answers in the space given below:

      b) Compare your answers with those given at the end of the Unit.

1. List the strategies to promote cognitive difficulties of children with intellectual disability in a classroom?

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2. What do you mean by behavioural characteristics?

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3.4 SPECIFIC LEARNING DISABILITY: NATURE, NEEDS, ASSESSMENT AND INTERVENTION

Specific Learning Disability(SLD) means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, speak, spell or do mathematical calculations, it is frequently misunderstood because it is a hidden disability. It may be mistaken as intentional non-cooperative behavior of the child. In recent years, the field of SLD is receiving considerable attention. It is reported that Thomas Alva Edison, Albert Einstein, Abhishekh Bachhan and many other distinguished individuals are said to have had learning disability. In this unit, we discuss briefly, an overview of specific learning disabilities, examining probable causes and the various categories.

Learning disability interferes with someone's ability to process store or reproduce information.

Such a disability affects both children and adults. It is not always immediately obvious that a person has a learning disability. They can be quite subtle and go undetected throughout life.

Definition

The National Joint Committee for Learning Disability (NJCLD) in the USA in 1981 proposed the following definition.

"Learning Disability is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning and mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a Learning Disability may occur concomitantly with other handicapping conditions (such as sensory impairment, mental retardation, social and emotional disturbances) or environmental influences (such as cultural differences, insufficient or inappropriate instruction, psychogenic factors), it is not the influence of those conditions or influence.

Learning disorders refer to a significant deficit in learning due to a person's inability to interpret what is seen and heard, or to link information from various parts of the brain (GEON, 2005).

The Rights of Persons with Disabilities Act (RPwD) 2016 has included Learning Disabilities and defines the condition as follows.

> *'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'*

Causes

New evidence seems to show that most learning disabilities do not stem from a single, specific region of the brain, but from difficulties in bringing together information from various brain regions. Today, a leading theory is that learning disabilities stem from subtle disturbances in brain structures and functions. Some scientists believe, that, in many cases, the disturbance begins before birth. Approximately 4.6% of school aged children are identified as learning disabled. Some of the causes are listed below.

- Prenatal
    - complicated pregnancies
    - toxemia
    - prematurity
    - low birth weight
    - Rh - incompatibilities
    - anoxia
    - maternal endocrine disorders
    - radiation
    - maternal age
    - consumption of drugs, alcohol and tobacco
    - accidents during pregnancy
- Postnatal
    - head injury
    - lead poisoning
    - nutritional defects
    - deprivation of sensory stimulation
- Genetic factors
- Biochemical factors

    Hypoglycemia, Hypothyroidism

Types of specific learning Disability:

- Significant problems in reading (dyslexia)
- Significant problems in math (dyscalculia)
- Significant problems in writing (dysgraphia)

Other Types of Learning Disabilities

Reading, writing, and math are not the only skills impacted by learning disorders. Other types of learning disabilities involve difficulties with motor skills (movement and coordination), understanding spoken language, distinguishing between sounds, and interpreting visual Information.

Dysphasia is a speech and language disorder, which is characterized by impairment in the ability to express by speech, write or use signs to communicate; the ability of comprehension of spoken or written language is also impaired.

Dyspraxia is a type of learning disability associated with motor skill development, especially fine motor skills. Dyspraxia means that movement and coordination are affected. It is a motor planning disorder not a muscular deficit.

Nonverbal Learning Disorder or NVLD is a developmental learning disorder with manifestations in somato-sensory and motor functions, visuo-spatial and visuo-constructive functions, arithmetic, social cognition, and inferential reasoning. Their deficits are neither verbal nor purely academic (in reading, writing, maths), rather they are lacking in social perception. Although they possess well-developed verbal skills, these children are unable to comprehend the significance of many aspects of their environment. They have difficulty interpreting the meaning of others' actions, gestures and facial expressions. In short, these children have trouble "reading between the lines."

The Table 1 gives brief description.

Table 1: Processing difficulties in persons with LD

1.	Reading	Dyslexia	• Recognizing letters and words • Interpreting information that is presented in parent	— Visual Dyslexia — Auditory Dyslexia — Sound Blending — Memory Skill — Letter & word rehearsal
2.	Written expression	Dysgraphia	• Writing difficulties • Spelling difficulties • Handwriting difficulties	— Pre-writing skills — Letter formation — Manuscript writing — Cursive writing
3.	Math	Dyscalculia	• Difficulties in mathematical concepts & computation	— Shape discrimination — Size discrimination — Sets & numbers — Counting — Auditory visual association — Place value — Computational skills — Measurement — Quantitative language

Characteristics

Lerner (2000) identified eight learning and behavioural characteristics of individuals with LD. These are-

- Disorders of attention

- Poor motor abilities

- Oral language difficulties

- Reading difficulties

- Written language difficulties

- Quantitative disorders

- Social skill deficits

The children with SLD are a heterogeneous group, it is important to note that all children may or may not show all these above listed behaviours. Some children also may be successful in academics and similarly all underachievement and academic failure are not attributed to learning disability.

However, the other difficulties shown by the children with learning disabilities are as follows;

Academic Difficulties

Academic problems are well recognized in persons with LD. Academic deficiencies manifest in reading, written work and mathematics. All these academic problems arise due to deficits in specific skills within each academic area.

Reading skills show problems as students find it rather difficult to acquire the phonological skills essential for adequate word recognition and comprehension. Oral reading fluency is also affected due to this.

In using oral language, what is observed is that difficulties/problems of syntax, semantics, phonology, morphology, articulation and pragmatics exist. These problems hinder the students' ability to comprehend classroom instruction as well as social interactions.

Problems in written language are characterized by poor penmanship, spelling errors, inconsistent or non-existent capitalization and punctuation along with creative expression deficits. What is observed about creative expression difficulties is that students show deficits in the ability to generate and develop ideas, organize content and appropriately use language to communicate.

As the problems in reading and writing are varied, so are the problems in mathematics encountered by the student. Acquisition of mathematical concepts, computation, measurement, estimation, geometrical calculation, problem solving are problematic areas.

Memory Skills

It is noted that persons with LD have memory deficits which affect the academic performance in students. These deficits are seen in the student's ability to encode process, store and retrieve information from short-term memory as well as long-term memory. These student's exhibit memory abilities characterized by ineffective strategies for memorization and ineffective metacognition skills for retrieval.

Cognitive and Meta Cognitive Skills

Completion of tasks requires an individual to use the cognitive and metacognitive capacities. Cognitive skills help an individual in gathering, storing and/or retrieving information to complete the tasks. Metacognitive skills on the other hand aid in using techniques to accomplish tasks efficiently. Thus, it makes use of self-monitoring and self-regulatory behaviours to complete the task.

People with LD are found to have inadequate cognitive and metacognitive skills, thus their academic as well as non-academic performance is hindered. It is noted that they have low awareness of appropriate skills to be used along with reduced ability to monitor and regulate behavior. Ability to generalize skills acquired is also deficient.

Attention and Hyperactivity

Many students with LD likely to display problem with attention as compared to their non-disabled peers. The nature of attention problems is difficulty in selective attention and sustained attention. Attention deficits thus interfere with selecting relevant aspects of a task to start it, as well as confusing on the task to complete it. Thus, on task behavior is reduced, which affects completion of academic and non-academic activities.

Hyperactivity is seen through restlessness, fidgeting, difficulty sitting on the seat, interrupting behaviours etc. Impulsivity or 'acting without thinking' may also be observed. Sometimes, both hyperactivity and impulsivity is seen.

Perceptual Skills

Perceptual skills are the cornerstone of any learning process. These skills help in understanding the environment around us. Students with LD are known to have deficits in visual and/or auditory perceptual abilities. The specific skills identified as being deficit are whole-to part as well part-to-whole perception. Visual and/or auditory discrimination and closure, and perception of space and time are also problematic.

Motivation

Motivation and interest are essential attributes for academic performance. Research has indicated that some students with LD lack the necessary motivation to complete academic activities successfully. Attribution of failure is made to self-i.e. to internal factors, which drastically influences their motivational levels. This results in learned helplessness-a feeling of helplessness in the face of demanding situations (academics for students with LD).

Social Skills

Many researchers have highlighted the deficits in social skills in students with LD. Problems are found in their ability to make and maintain friendships. The deficits are not only limited to this area, but are also found in their perception of self and others; using appropriate communication (language and rules) for social interaction.

1. Discrepancy exists between a child's ability and academic performance across one or all skill areas.

2. Academic learning difficulty - problems exist in reading, writing, spelling and mathematics.

3. Perceptual disorders -problems include inability to recognize, discriminate and interpret sensation. It can be in auditory or visual channel

- Meta-cognitive deficits

- Planning

- Checking the out come and remediation of errors

- Motor disorders- children with this problem are clumsy, exhibit fine motor difficulties

- Attention: problems and hyper activity

- Social and emotional problems

Other **psycho-social problems** associated with children with **learning problems** are:

- Impulsiveness

- Poor comprehension

- Disorganized

- Having low self esteem

- Having unpredictable behaviour

- Withdrawn

- Poor communication

- Anxiety

- Moody

- Confused

- Having difficulty in problem solving

Assessment of Persons with Specific Learning Disability

Diagnosis of Specific Learning Disabilities

Accurate diagnosis of learning disabilities is necessary to distinguish this disorder from other potential causes of the presenting symptoms or problems. It is also necessary to document the individual's strengths and to identify needs that result from impairments in specific psychological processes. Accurate diagnosis is fundamental to the development of specialized interventions at home, school, community, and workplaces.

Before a specialized evaluation of a student is conducted, pre-referral discussions by teachers regarding the nature of the problem, and what possible modifications to instructions in the classroom might be made are important.
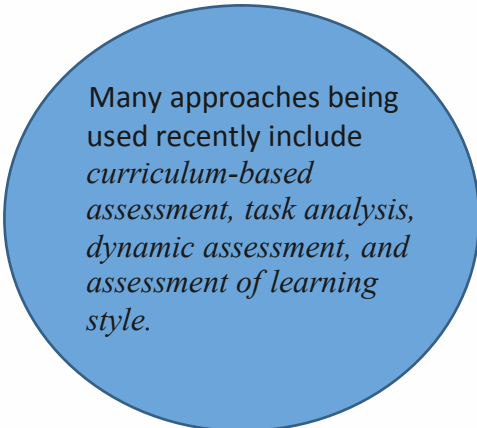
The child must be assessed in all areas related to the suspected disability such as health, vision, hearing, social and emotional status, general intelligence, academic

performance, communicative status, and motor abilities. (National Information Centre for Children and Youth with Disabilities, 2000).

An ideal assessment for LD is a lengthy process requiring several sessions with a qualified educational psychologist. Apart from administering a battery of tests, the psychologist also gathers relevant information about the child from the teachers and school records.

The assessment procedure for LD involves the following steps:

● Parental Consent and Parent Interview

● Gathering Information from the Teachers/School

● Looking at Student Workbooks.

● Administering the Tests

Many approaches being used recently include *curriculum-based assessment, task analysis, dynamic assessment, and assessment of learning style.*

A team may determine that a child has a specific learning disability if:

(1) The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed in paragraph (2) (a) of this section, when provided with learning experiences appropriate for the child's age and ability levels; and

(2) The team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the following areas:

    i) Oral expression,

    ii) Listening comprehension,

    iii) Written expression,

    iv) Basic reading skill,

    v) Reading comprehension,

    vi) Mathematics calculation, or

    vii) Mathematics reasoning

(a) The team may not identify a child as having a specific learning disability if the severe discrepancy between ability and achievement is primarily the result of:

    i) A visual, hearing, or motor handicaps

    ii) Mental retardation

    iii) Emotional disturbances or

    iv) Environmental, cultural, or economic disadvantage

Assessment Tools

NIMHANS Index

The National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru has developed the index to assess children with LD (Hirisave U, et al., 2002). There are two levels of this index. They are: Level I for children 5-7 years and Level II for 8-12 years.

Diagnostic Test of Learning Disability (DTLD)

Developed by Dr. Smriti Swarup and Dr. Dharmishta H. Mehta of SNDT Women's University, Mumbai in 2003. The test diagnoses learning disability in ten areas-from Auditory/Visual Perception to Cognitive areas. It consists of 10 sub-tests. It is to be individually administered on the age group 8-11 years old. A deficit in any of the area or areas or a combination of any, would lead to a learning problem.

Diagnostic Test of Reading Disorder (DTRD)

Developed by Dr. Smriti Swarup and Dr. Dharmishta H. Mehta of SNDT Women's University, Mumbai in 2003. Perceptual and cognitive deficits, assumed to be the underlying causes for the reading, writing problems, in the learning disabled provided the base for the development of the Diagnostic Test of Reading Disorders.

Behavioural Checklist for Screening the Learning Disabled (BCSLD)

Developed by Dr. Smriti Swarup and Dr. Dharmishta H. Mehta of SNDT Women's University, Mumbai in 2003. It is a screening tool which advocates use of other diagnostic tools for the assessment and determination of learning disability in the child.

Intervention of Students with Specific Learning Disability

It is difficult for children with learning disabilities to interpret what they see (visual perception). A child may not be able to judge size, shape, location, movement, and color because for him these properties keep changing. Because of the difficulty, they have problems in sorting out foreground and background; these children often focus on irrelevant details. It is difficult for children to recognize similarities and differences (visual discrimination). Their problems are magnified when they try to learn to recognize numbers and letters, as the differences are slight. The letters that are reversible are especially difficult (b, d), as are the ones with "tails" (p, q, j, g).

Visual tracking is the ability to focus the eyes on one point and then move them rhythmically from side to side, up and down, and diagonally. Some children have jerky eye movements, or move their whole head instead of just their eyes. Part-whole relationships (visual closure) cause problems. Children have trouble identifying missing parts; a picture of a three-legged chair appears normal to them. They also have trouble remembering what they see (if you had four objects on the table, covered them, removed one, and asked them to name the missing object they probably couldn't). Poor visual memory also makes it difficult to remember sequences. Visual-motor integration or eye-hand coordination is often problematic. The children predictably have a challenging time drawing, pasting, and particularly cutting.

Auditory skills are also challenging Auditory discrimination is the ability to tell the difference between sounds. Children with learning disabilities have difficulty recognizing differences in sounds or words; hence they often misinterpret meanings (rat, rap). They also have problems identifying the rhyming elements of words. They find classifying words next to impossible (for example, finding all the words that start with a). Hierarchical classifications are generally beyond their capability. As you might guess, these are children who do not enjoy sound and word games and who often cannot express thoughts and ideas clearly.

Auditory memory is the ability to remember what has been heard. Sometimes children forget the beginning by the time you get to the end of a long sentence. The second request in two-step directions may not be remembered. They may also have trouble locating the source of a sound (if you call their name they may search around the room and not find where you are).

Accommodations are made in the classroom to "level the playing field" and provide equal and ready access to the task at home. Some sample accommodations that can be provided to assist children with learning disabilities in the regular classroom can be sorted into the following six categories.

1. Presentation

   - Provide on audio tape

   - Provide in large print

   - Reduce number of items per page or line

   - Provide a designated reader

   - Present instructions orally

2. Response

   - Allow for verbal responses

   - Allow for answers to be dictated to a scribe

   - Allow the use of a tape recorder to capture responses

   - Permit responses to be given via computer

   - Permit answers to be recorded directly into the test booklet

3. Timing

   - Allow frequent breaks

   - Extend Allotted time for a test

4. Setting

   - Provide preferential seating

   - Provide special lighting or acoustics

   - Provide a space with minimal distractions

   - Administer a test in a small group setting

   - Administer a test in private room or alternative test site

5. Test Scheduling

   - Administer a test in several timed sessions or over several days

   - Allow subtests to be taken in a different order

   - Administer a test at a specific time of day

6. Other

   - Provide special test preparation

   - Provide on-task/focusing prompts

   - Provide an outline of the day's activities on the board

   - Provide kinesthetic opportunities (i.e. Manipulatives)

   - Recognize success no matter how small

Promoting Inclusive Practices

To promote successful inclusion in general education classroom for students with specific learning disabilities, the teacher need to use the adaption in both curriculum and instructions.

Adaptation includes both accommodations and modifications. Accommodations refer to the change in input and output processes in teaching and learning whereas modification refers to change in contents or standards.

The teacher may consider the following curricular and instructional adaption in a general education classroom.

● Material adaptations

● Instructional delivery adaptations

● Product and assignments adaptations

● Adaptations in home work.

● Adaptations in classroom teaching

● Adaptations in classroom grading.

Activity II

1. List out the difference and similarities between Mental Retardation and Specific Learning Disability.

2. What is the difference between accommodation and modification.

Check Your Progress 1

Notes: a) Write your answers in the space given below:

   b) Compare your answers with those given at the end of the Unit.

3. Name the Types of Specific Learning Disabilities?

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4. What do you mean by psycho social problems of Specific Learning Disabilities?

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3.5 AUTISM SPECTRUM DISORDER: NATURE, NEEDS, ASSESSMENT AND INTERVENTION

Autism Spectrum Disorder (ASD) and autism are both general terms for a group of complex disorders of brain development. These disorders are characterized, in varying degrees, by difficulties in social interaction, verbal and nonverbal

communication and repetitive behaviors.

With the DSM-5 diagnostic manual, all autism disorders are merged into one umbrella, diagnosis of ASD. Previously was recognized as distinct subtypes, including autistic disorder, childhood disintegrative disorder, pervasive developmental disorder-not otherwise specified (PDD-NOS) and Asperger syndrome.

Autism Spectrum Disorder is a neurodevelopmental disability that affects a child's ability to communicate, understand language, play and interact with others. It is a life-long pervasive developmental disorder that affects normal development of the brain in areas that impact communication and social interaction combined with restricted patterns of behaviours. Impairments in these areas range from mild to profound. A high-functioning individual with autism can have a high IQ, can be verbal and may socially interact with others while a low-functioning individual with autism may have mental retardation, be completely non-verbal and may not interact with others. This extensive range represents many autism conditions that are known as Autism Spectrum Disorders.

ASD is a complex developmental disability that typically appears during the first three years of life. The result of a neurological disorder that affects the functioning of the brain, autism and its associated behaviors have been estimated to occur in as many as 1 in 500 individuals (INCLEN, 2016). Autism is four times more prevalent in boys than girls and knows no racial, ethnic, or social boundaries. Family income, life-style, and educational levels do not affect the chance of autism's occurrence.

As per the survey of International Clinical Epidemiology Network Trust (INCLEN), 1 to 1.5 per cent are autistic children between ages two and nine in India," .That means a prevalence rate of one in 66. In the absence of national studies, the estimated rate for autism in India so far varied between an impressionistic 1 in 500 and 1 in 150. The survey was conducted on 4,000 households in Andhra Pradesh, Odisha, Himachal Pradesh, Haryana and Goa in collaboration with AIIMS, Thiruvananthapuram Medical College and universities of Stanford and Pennsylvania, US

http://indiatoday.html.

ASD interferes with the normal development of the brain in the areas of social interaction and communication skills. Children and adults with autism typically have difficulties in verbal and non-verbal communication, social interactions, and leisure or play activities. The disorder makes it hard for them to communicate with others and relate to the outside world. They may exhibit repeated body movements (hand flapping, rocking), unusual responses to people or attachments to objects, and they may resist changes in routines

Although many definitions of ASD have been developed, no single definition has been universally accepted. ASD is a developmental disability that primarily results in deficit in verbal and nonverbal communication and social interaction, generally evident before the age of three years and adversely affects the child's educational performances. ASD means a condition of uneven skill development primarily affecting the communication and social abilities of a person, marked by repetitive and ritualistic behaviour.

Prevalence and Causes of Autism Spectrum Disorder

ASD is at the forefront of local, national, and international educational and political agendas. Autism is currently receiving major attention because over the past decade there has been an explosion in worldwide prevalence rates (Fombonne, 2000).

Although ASD is a lifelong disability, training can make a considerable progress. ASD has its onset prior to the age of three and as research demonstrates, there are early signs that can help with early identification. The major benefit of early detection is timely access to early intervention services.

Identification of Children with ASD

Just as autism is hard to define, children with autism are difficult to identify. Problems related to the identification of these children include the following:

- Children with ASD display characteristics exhibited by individuals with other disabilities, such as speech and language disorders.

- Many children with ASD, because they exhibit disorders across multiple domains are mistakenly classified as having multiple disabilities.

- No stable classification system is used among educators and other professionals who encounter children with ASD.

Still another problem in identifying children with ASD is the large, diverse group of professionals involved in the evaluation and diagnosis. In diagnosing some disabilities, educators function as the lead professionals; in autism, paediatricians, speech-language pathologists, psychologists, audiologists, and social workers are typically involved as well (Powers, 1982). Working with such a large group of individuals can cause difficult logistical problems. Diverse definitions and eligibility criteria, different funding agencies, and varying services complicate the process of identifying and serving these children and adults.

There is no single specific cause of autism, but a variety of factors can result in this disability. Organic factors such as brain damage, genetic links, and complications during pregnancy may cause this condition, though in most cases no cause can be confirmed. Some children have a higher risk for autism than others. ASD is a relatively rare condition, although the number of children identified over the past few years has increased dramatically. The incidence of autism varies directly with the definition used. More restricted definitions result in approximately 0.7 to 2.3 individuals per 10,000 being identified, while less restrictive definitions may result in the identification of as many as 7 to 14 per 10,000 (Koegel et al.). The Autism Society of America estimates as many as one in 500 may have autism (2002).

Types and Characteristics of Person with Autism Spectrum Disorder

As per the DSM -V the following three conditions are included in Autism spectrum disorder.
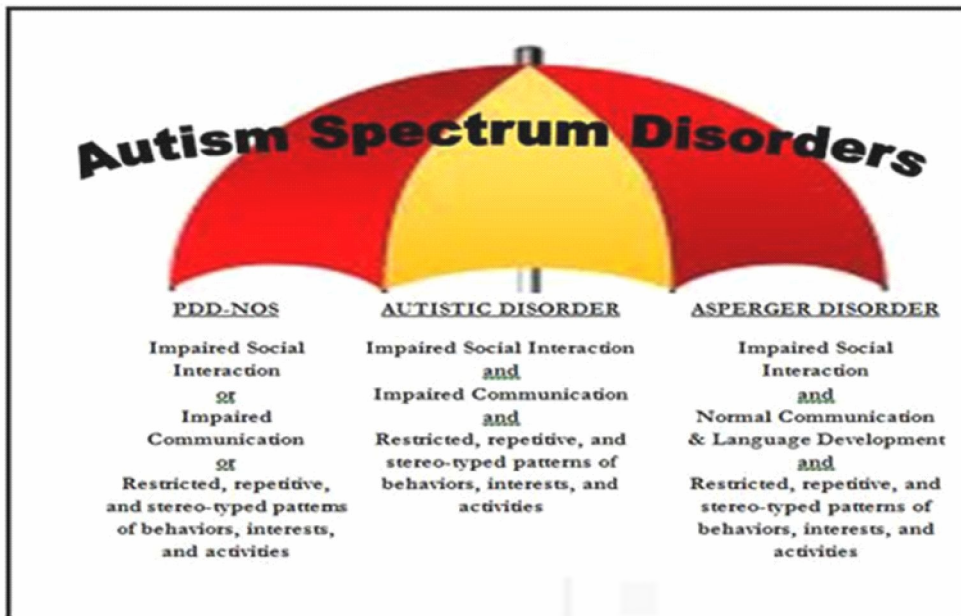
Source: DSM V Diagnostic Manual, 2013

The condition of autism has many varied symptoms and characteristics. Although not all people with autism manifest every characteristic, the following areas and specific behaviors are typical.

Social Interactions and Relationships

- Significant difficulty developing
    - Eye-to-eye gazing
    - Facial expressions
    - Body posture
- Failure to establish friendships with children of the same age
- Lack of interest in sharing enjoyment, interests or achievement with other people
- Appearing to be unaware of others
- Lack of empathy
- Difficulty relating to people

Verbal and Nonverbal Communication

- Delay in or lack of learning to talk
- Problem taking steps to start and/or continue a conversation
- Non-speech vocalizations
    - Grunting
    - Humming

- Stereotyped and repetitive use of language
  - o Echolalia
  - o Repeats what one has heard again and again
- Difficulty in understanding listener's perspective
  - o Does not understand humour
  - o Takes conversation literally (communicates word for word)
  - o Fails to catch implied meaning

Activities and Play

- An unusual focus on pieces (e.g., focus on the wheels on the toy car rather than on the entire car)
- Using toys and objects in an unconventional manner
- Preoccupation with certain topics e.g.
  - o Fascination with schedules
  - o Weather patterns
  - o Numbers
- A need for sameness and routines
  - o Insists that environment and routine remain unchanged
  - o Insists on driving the same route to school everyday
- Stereotyped behaviors
  - o Body rocking
  - o Hand flapping
  - o Self-stimulatory behavior
  - o Self-injurious behavior (head banging)
  - o Preoccupation with hands

Assessment of Persons Autism Spectrum Disorder

There is no single test for diagnosing autism spectrum disorder (ASD). Diagnosis of ASD usually involves a range of tests and measures. Often, it also involves several different specialists and professionals. Instead, diagnosis is based on watching how a child plays and interacts with others (current development), interviewing parents, and reviewing the child's developmental history (past development). By using a combination of tools, professionals can diagnose a child with ASD, and determine where on the spectrum the child falls.

Tests and Tools for Diagnosing Autism Spectrum Disorder

Although no test or tool can replace diagnosis by an experienced clinician, there are standardised tools that help clinicians with diagnosing autism spectrum disorder. It is a neuro-developmental disorder spanning entire life. There is no definitive cure. It is of paramount importance that children with Autism are identified early and started on intervention. The effect of autism can be minimized by early diagnosis and with the right interventions.

Indian Tools

Indian Scale for Assessment of Autism (ISAA)

Developed by NIEPID Secunderabad. Available from: http://www.nimhindia.org.autism-india.com/autism.../indian-scale-for-assessment-of-autism-isa.

● ISAA is a 40-item scale divided into six domains.

International Clinical Epidemiology Network (INCLEN) INCLEN Diagnostic Tool for Autism Spectrum Disorder (INDT-ASD) (can be retrieved from inclentrust.org)

Some of the other tests and screening measures that can assist in the diagnosis of ASD include:

● Autism Diagnostic Observation Schedule (ADOS)

● Autism Diagnostic Interview (ADI)

● Childhood Autism Rating Scales (CARS)

● Modified Checklist for Autism in Toddlers (M-CHAT)

● Developmental Behaviour Checklist (DBC)

● Social Communication Questionnaire (SCQ)

● Psycho Educational Profile - Revised (PEP-R)

● Autism Behaviour Checklist (ABC).

Intervention

There is no single intervention protocol for all children with autism; however, most individuals respond best to highly structured behavioral programs. Brief statements of the most commonly used behavior programs include the following aspects.

Applied Behaviour Analysis (ABA) - The use of positive reinforcement and other principles of applied behaviour analysis are used to build communication, play, social, academic, self-care, work, and community living skills and to reduce problem behaviors in learners with autism of all ages. The final goal of ABA intervention is to enable the child to function independently and successfully in a variety of settings.

Verbal Behaviour Intervention - The verbal behaviour approach focuses on teaching specific components of expressing language (mands, tact, intraverbals, and others). This approach begins with mands training, which teaches a child to request desired items, activities, and information-teaching the child that "words" are valuable and lead them to getting their wants and needs met.

Floor Time - Developed by child psychiatrist Stanley Greenspan, Floor time is a treatment method and a philosophy for interacting with autistic children. The goal and purpose for this strategy is to move the child through the six basic developmental milestones in emotional and intellectual growth. Those six include (1) self-regulation and interest in the world, (2) intimacy, (3) two-way communication, (4) complex communication, (5) emotional ideas, and (6) emotional thinking. The intervention is called Floor time because those working with the child get down on the floor to engage with the child at his or her level.

Gluten Free, Casein Free Diet (GFCF) - This is a popular dietary intervention that consists of the removal of gluten (a protein found in barley, oats, and wheat) and

casein (a protein found in dairy products). This theory is based on the hypothesis that these proteins are absorbed differently in children with autism spectrum disorder. There is no scientifically based research indicating the effectiveness of this intervention; however, families report that dietary elimination of gluten and casein has helped to regulate bowel habits, sleep, activity, habitual behaviors, and enhance overall progress in their child.

Occupational Therapy - The focus of utilizing occupational therapy as treatment for children with autism is to maintain, improve, or introduce skills that allow an individual to participate as independently as possible in meaningful life activities. Coping skills, fine motor skills, play skills, self-help skills, and socialization are all targeted areas that can be addressed in this setting.

Picture Exchange Communication System (PECS) - PECS is a type of augmentative and alternative communication technique where individuals with little or no verbal ability learn to communicate using picture cards. Children use the pictures to "vocalize" a desire, observation, or feeling. Many children with autism learn visually, and therefore, this type of communication technique has been shown to be effective in improving independent communication skills

Relationship Development Intervention (RDI) - This intervention is based on the work of psychologist Teven Gutstein and focuses on improving the long-term quality of life for all individuals on the spectrum. It is a parent-based treatment that focuses on the core problems of gaining friendships, feeling empathy, expressing love, and being able to share experiences with others (Gutstein & Sheely, 2002).

Sensory Integration Therapy - This intervention involves the process through which the brain organizes and interprets external stimuli such as movement, touch, smell, sight, and sound. It is often common for children with autism to exhibit symptoms of Sensory Integration Dysfunction (SID), making it difficult to process information brought in through the senses. Children can have mild, moderate, or severe SID, manifesting in either increased or decreased sensitivity to sound, touch, and movement. The goal of sensory integration therapy is to facilitate the development of the nervous system's ability to process sensory input in a more typical way. When successful, this has been known to improve attention, concentration, listening, comprehension, balance, coordination, and impulsivity control in some children.

Facilitated Communication was designed to be an augmentative communication strategy that involves the use of a "facilitator" who gently provides hand-over-hand physical assistance to individuals with disabilities as they type (or point to pictures) to communicate. This method can be used with individuals of all ages who are otherwise unable to effectively communicate using speech. Facilitated communication is a highly controversial technique due to concerns that the facilitator may guide the individual's responses.

Relationship Development Intervention (RDI) - This is a family-based, behavioral treatment designed to address the core symptoms of autism. It is based on the theory that dynamic intelligence (the ability to think flexibly) is the key to improving the quality of life for individuals with ASD. RDI helps individuals form personal relationships by strengthening the building blocks of social connections, including the ability to form emotional bonds and share experiences.

JASPER (Joint Attention Symbolic Play Engagement Regulation)-a treatment approach that combines developmental and behavioral principles. This approach targets the foundations of social communication (joint attention, imitation, play) and uses naturalistic strategies to increase the rate and complexity of social communication.

The approach incorporates parents and teachers into implementation of intervention to promote generalization across settings and activities and to ensure maintenance over time (Kasari, Paparella, Freeman, & Jahromi, 2008).

Discrete Trial Training (DTT)-a one-to-one instructional approach utilizing behavioral methods to teach skills in small, incremental steps in a systematic, controlled fashion. The teaching opportunity is a discrete trial with a clearly identified antecedent and consequence (e.g., reinforcement in the form of praise or tangible rewards) for desired behaviors. DTT is most often used for skills that learners are not initiating on their own, have a clear, correct procedure, and can be taught in a one-to-one setting.

Pivotal Response Treatment (PRT)-a play-based, child-initiated behavioral treatment. Formerly referred to as Natural Language Paradigm (NLP), PRT has as its goals to teach language, decrease disruptive behaviors, and increase social, communication, and academic skills. Rather than target specific behaviors, PRT targets pivotal areas of development (response to multiple cues, motivation, self-regulation, and initiation of social interactions) that are central to-and result in improvements across-a wide range of skills (Koegel & Koegel, 2006). PRT emphasizes natural reinforcement (e.g., the child is rewarded with an item when a meaningful attempt is made to request that item).

Social Story- Social Story is a highly structured intervention that uses stories to explain social situations to children and to help them learn socially appropriate behaviors and responses (Gray et al., 2002). A Social Story is a short story that describes a situation or social skill that an individual is having difficulty in understanding. The aim of the story is to provide the child with insight into the situation and to enable them to respond more appropriately to it. Carol Gray first defined 'Social Stories' in 1991 as an approach for children with Autistic Spectrum Disorders. The stories can be helpful for children who find social situations difficult / confusing but do not have ASD. Social Stories have a specific formula which has been found to be effective. There are books containing 'off the peg' social stories for common situations, but it can work best if stories are written with the individual child and situation in mind, by someone who knows the child well.

Speech Therapy - The communication difficulties of children with autism vary depending on the intellectual and social development of the individual. Some children are unable to speak, whereas others have well-developed vocabularies and can speak at length on topics that interest them. Although some children have a little difficulty in pronouncing words, most children with autism have difficulty effectively using language. Children with autism frequently exhibit difficulties in the pragmatic use of language such as knowing what to say, how and when to say it, and how to use language to socially interact in an acceptable way with others. Many children with autism will repeat verbatim what they have heard (echolalia) or repeat irrelevant scripts they have memorized. Others will speak in a high-pitched voice or use robotic sounding speech.

Intervention of persons Autism Spectrum Disorder

Educational Strategies and Approaches for Teaching Students with Autism

- Directions should be given one at a time.

- Avoid giving repetition of the directions

- Break instructions down into smaller chunks

- Confer with other support teachers

- Provide positive behaviour management opportunities

- Provide clear expectations and rules

- Use concrete, tangible visual aids (e.g., pictures and charts).

- Encourage the use of talent areas and provide additional learning opportunities in these areas

- Practice functional real-life skills (e.g., use real money rather than play money when learning to count money).

- Use real places when learning about acceptable public behavior

- Use field trips to provide concrete learning experiences.

Promoting Inclusive Practices

Traditionally the students with autism were not considered for placement in Inclusive settings as they present significant challenges to class room teachers. A key challenge of the successful inclusion of these students is the incorporation of curricular need into the educational programme. They are as follows;

- To develop basic language and social skills.

- To provide academic instruction consistent with cognitive level

- To teach functional skills for post school success.

- To provide behavioural intervention to enhance social and functional skills.

Class room Adaptations

The development of successful special education programme for students with Autism requires specific attention to classroom adaptations. They are as follows;

1. **Behavioural Adaptation**

   - Applied Behavioural Analysis,

   - Reinforcement

   - Discrete Trial Training,

   - Shaping,

   - Antecedent Intervention

2. **Instructional Adaptions**

   - Individualised Educational Plan

   - Individualised Family Support Plan

   - Systematic instruction for meaningful skills

   - Creation of structured learning environment.

   - Application of functional approach.

3. **Selected Curricular Adaptation**

   - Social Stories

   - Picture Exchange Communication System

4. **Alternative and Material Adaptation.**

Activity III

1. Interview a Special Educator working in the field of ASD and list out the Special talents of children with ASD.

2. Develop a social story for a child with autism spectrum disorder whom you know.

Check Your Progress III

Notes: a) Write your answers in the space given below:

b) Compare your answers with those given at the end of the Unit.

5. Describe any one specific behaviour of children with ASD.

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6. What do you mean by Picture Exchange Communication?

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3.6   LET US SUM UP

After going through this unit, you must have a basic understanding about the common neurodevelopmental disabilities. After describing the concept and definition of the specific type of neurodevelopmental disability ie Intellectual Disability, Specific Learning Disability and Autism Spectrum Disorder we have briefly discussed the causes and prevalence of ID/SLD/ASD. The identification criteria also have been described. Further we have described the types and the characteristics of all the major types of disabilities which will help you in understanding the strengths and needs of children with specific type of disability. The most key area is promoting inclusive practices for all the three categories of disabilities which will help you in managing the classroom.

3.7   UNIT END QUESTIONS

1. Based on the current knowledge on Neuro Developmental Disabilities, what challenges you visualise in including them in the society?

2. Given an option which are the areas of disability you would render your services and why?

3. What services you will provide for inclusion of children with special needs?

3.8 ANSWERS TO CHECK YOUR PROGRESS

1. Provide concrete examples in instruction, provide contextual learning experiences, Encourage active interaction between student and the environment

2. Behavioural characteristics are maladaptive, repetitive, age inappropriate, limited social skills - immaturity in different social situations, low frustration tolerance, poor self-concept(self-image)

3. Types of SLD are Dyslexia, Dysgraphia, Dyscalculia, Dyspraxia and Non Verbal Learning Disability.

4. Psycho-social problems are impulsiveness, poor comprehension, disorganized, having low self-esteem, having unpredictable behavior, withdrawn, poor communication, anxiety, moody and confused.

5. Social Interactions and Relationships Failure to establish friendships with children Lack of interest in sharing enjoyment, interests, or achievement with other people Appearing to be unaware of others Lack of empathy Difficulty relating to people

6. Picture Exchange Communication is a type of augmentative and alternative communication technique where individuals with little or no verbal ability learn to communicate using picture cards. Children use the pictures to "vocalize" a desire, observation, or feeling.

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