NETAJI SUBHAS OPEN UNIVERSITY

B.Ed.Spl.Ed. (M.R./H.I./V.I.)-ODL

INTRODUCTION TO NEURO DEVELOPMENTAL DISABILITIES

(LD, MR [ID], ASD)

B-8

B. Ed. Spl. Ed (M. R. / H. I. / V. I)-
ODL Programme

AREA - B

B-8 : Introduction to Neuro Developmental Disabilities (LD, MR [ID], ASD)

A COLLABORATIVE PROGRAMME OF
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AREA - B ● CROSS DISABILITY AND INCLUSION

COURSE CODE - B8

TITLE : INTRODUCTION TO NEURO DEVELOPMENTAL DISABILITIES

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The Self Instructional Material (SIM) is prepared keeping conformity with the B.Ed.Spl. Edu.(MR/HI/VI) Programme as prepared and circulated by the Rehabilitation Council of India, New Delhi and adopted by NSOU on and from the 2015-2017 academic session.

Dr. Ashit Baran Aich
Registrar, (Actg.)

Netaji Subhas Open University

From the Vice-Chancellor's Desk

Dear Students, from this Academic Session (2015-17) the Curriculum and Course Structure of B. Ed.- Special Education have been thoroughly revised as per the stipulations which featured in the Memorandum of Understanding (MoU) between the Rehabilitation Council of India (RCI) and the National Council for Teacher Education (NCTE). The newly designed course structure and syllabus is comprehensive and futuristic has, therefore, been contextualized and adopted by NSOU from the present academic session, following the directives of the aforesaid national statutory authorities.

Consequent upon the introduction of new syllabus the revision of Self Instructional Material (SIM) becomes imperative. The new syllabus was circulated by RCI for introduction in the month of June, 2015 while the new session begins in the month of July. So the difficulties of preparing the SIMs within such a short time can easily be understood. However, the School of Education of NSOU took up the challenge and put the best minds together in preparing SIM without compromising the standard and quality of such an academic package. It required many rigorous steps before printing and circulation of the entire academic package to our dear learners. Every intervening step was meticulously and methodically followed for ensuring quality in such a time bound manner.

The SIMs are prepared by eminent subject experts and edited by the senior members of the faculty specializing in the discipline concerned. Printing of the SIMs has been done with utmost care and attention. Students are the primary beneficiaries of these materials so developed. Therefore, you must go through the contents seriously and take your queries, if any, to the Counselors during Personal Contact Programs (PCPs) for clarifications. In comparison to F2F mode, the onus is on the learners in the ODL mode. So please change your mind accordingly and shrug off your old mindset of teacher dependence and spoon feeding habits immediately.

I would further urge you to go for other Open Educational Resources (OERs) - available on websites, for better understanding and gaining comprehensive mastery over the subject. From this year NSOU is also providing ICT enabled support services to the students enrolled under this University. So, in addition to the printed SIMs, the e-contents are also provided to the students to facilitate the usage and ensure more flexibility at the user end. The other ICT based support systems will be there for the benefit of the learners.

So please make the most of it and do your best in the examinations. However, any suggestion or constructive criticism regarding the SIMs and its improvement is welcome. 1 must acknowledge the contribution of all the content writers, editors and background minds at the SoE, NSOU for their respective efforts, expertise and hard work in producing the SIMs within a very short time.

Professor (Dr.) Subha Sankar Sarkar
Vice-Chancellor, NSOU

B. Ed. Spl. Ed (M. R. / H. I. / V. I)-
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AREA - B

B-8 : INTRODUCTION TO NEURO DEVELOPMENTAL DISABILITIES (LD, MR [ID], ASD)

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AREA - B
B-8 : INTRODUCTION TO NEURO DEVELOPMENTAL DISABILITIES
(LD, MR [ID], ASD)

B-8 ❐ Introduction to Neuro Developmental Disabilities

Introduction to Neuro Developmental Distibilities (B 8)

Unit-1 ❑ Learning Disabilities, Needs and Intervention

Structure :

1.1. Introduction

— Definition, types and characteristic

1.1.1 Objective

1.1.2 Definitions

1.1.3 Types and characteristic

1.1 Introduction

Now we often here a term Learning Disability. It is a different problem in education. We cannot identify such a children with that particular disability by his or her external behaviour. We have already meet with such types of children in our educational field. Some children cannot achieve the target in the class due to their learning disability.

History suggest that the term learning disabilities originated with and became popularized by Dr. Samuel Kirk based on his writings in the early 1960s and comments that were made at the April 6, 1963 Conference on Exploration inti Problems of the Pereceptually Handicapped Child. His proposed label was "enthusiastically received and helped to unite the participants into an organization known as the Association for Children with Learning Disabilities, the forerunner of today's Learning Disabilities Association" (Learner, 2000).

I have used the term "learning disabilities" to describe "a group of children who have disorders in development in language, speech, reading, and associated communication skills needed for social interaction. In this group I do not include children who have sensory handicaps such as blindness or deafness, because we have methods of managing and training the deaf and the blind. I also exclude from this group children who have generalized mental retardation, (Kirk, 1963, p.2)

During the latter part of the 1960s, there became greater awareness about

learning disabilities, both from the general public and Congress. In response, the U.S. Office of Education was charged with creating a federal definition for what constitude a learning disability. Samuel Krik chaired this committe. In 1986, the first annual report of the National Advisory Committe on Handicaped Children, headed by Dr. Kirk, worte :

Children with special learning disabitlities exhibit a disorder in one or more of the basic, psychological processess involved in understanding or in using spoken or written languages. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or arithemetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual hearing, or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage. (Special Education for Handicappped Children, 1968)

By the end of 1968, "specific learning disability" (abbreviated SLD or LD) became a federally designated category of special education (U.S. Office of Education, 1968) and in 1969, the Specific Learning Disabilities Act was enacted, Public Law 91-230. In 1975, Congress enacted P.L. 94-142, the Education for All Handicapped Children's Act. Here, the defination of a learning disability was formalized for children in special education. Under P.L. 94-142, a specific learning disability was defined as follow.

"....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, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia." However, learning disabilities do not include learning problems that are primarily the result of visual, hearing or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural or economic, disadvantage.

The continuance of the P.L. 94-142 definition in federal law prompted further analysis. In the 1980s, a coalition of parent and professional organizations, described as the National Joint Committee on Learning Disabilities (NJCLD), criticized the definition under P.L. 94-142 for including concepts that were unclear or difficult to use identify children with learning disabilities. In response to the criticisms, the NJCLD proposed an alternative defination.

Learning disabilities is a general term that refers to a heterogeneous group of disorders manifeasted by significant difficulties in the acquistion and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction, and may occur across the lifespan. Problems in self-regulatory behaviours, social perception, and social interaction may exist with learning disabilities but do not by themselves constitute a learning disability. Although learning disabilities may occur concomitantly with other handicapping conditions or with extrinsic influences, they are not the direct result of those conditions or influences (NJCLD, 1994).

Today, children in special education are protected under Public Law 108-446, The individuals with Disabilities Education Improvement Act (IDEA 2004). The definition under IDEA has not changed in its criteria and guidelines for what constitutes a learning disability. Under curretn federal law the following language was established.

The term "specific learning disability" means a disorder in I or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.

We are more conscious about this problem. Many educationist and psychologist have emphasized on learning disability. As we are in 21st century we can confirm the education of all types of childern.

In this unit you are going to study about the definitions, types and characteristics, tools and areas of management of learning disability.

Definition, Types and Characteristic :

As should be evident, the debate surrounding what constitutes a learning disability continues on a strong as ever. Remember, this is a multidisciplinary field that embraces sometimes competing viewpoints as the very nature of the construct and its causes. It is perhaps best to envision LD as "a family or syndrome of disabilities affecting a wide range of academic and/or behavioural performance (Gargiulio, 2004, p. 206). In particular, regardless of the definition used, children with learning disabilities have intellectual functioning within the normal range, there is a

discrepancey between potential and achievement, the learning disability is not due to other causes, there is difficulty in learning, and there is a presumption of central nervous system dysfunction.

1.1.1. Objectives

Upon completion of these subunits, you will be able to :

- Define Learning Disability
- Describe the types of Leraning Disability
- Explain the characteristics of Learning Disability.

1.1.2. Definitions

Learning Disability is an important meaningful word. The person who has learning disability may have rigid personality, cognitive ability and development characteristic also. The perceptual problem and lake of communication skill are only seen in this kind of disability. This kind of disability is not seen externally as such as other disabilities. So this type of disability is called Hidden Disorder (Anderson 1970).

Therefore we can say that if a child cannot adjust with his curriculum due to other disabilities we can't say that the child is with learning disability. Because it is a different type of disability and a child cannot able to learn properly due to other causes of disability. But if a child has the particular cause of learning disability the child categorized as the learning disabled.

Dr. Kirk (1963) said in a conference at Chicago – "A learning disability refers to retardation disorder, or delayed development in one or more of theprocesses of speech, language, reading, writing, arithmetic, or other school subject resulting froma psychological handicap caused by a possible cerebral dysfunction and/or emotional or behavioural disturbances. It is not the result of mental retardation, sensory deprivation, or cultural and Insturctional factors.

Kirk also said that LD refer to a retardation, disorder of delayed development in one are more of the processes of special language, reading, spelling, written or arithemetic resulting from a possible cerebral dysfunction and emotional or behavioural disturbance.

U.S. Office of Education 1977 definition. By the early 1970s NACHC definition of 1968 had become the most popular one among state departments of education

(Mercer, Forgnone, & Wolking, 1976). This no boubt figured into the USOE's virtual adoption of the NACHC definition for use in the implementation of P.L. 94-142 :

The term "specific learning disability" means a disorder in one or more of the psychological processes involved in underestanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term does not include children who have learning disabilities which are primarily the result of visual, hearing, or motor handicaps, or mental retardation, or emotional disturbance, or of enviormental, cultural, or economic disadvantage. (USOE, 1977, p. 65083).

Early during this period, several new and revised definitions surfaced : the ACLD (now the LDA) definition of 1986, the Interagency Committee on Learning Disabilities (ICLD) difinition of 1987, and the NJCLD revised definition of 1988. In the meantime, the definition in federal law covering learning disabilities remained virtually unchanged.

ACLD / LDA definition (1986). The LDA definition is distinctive for its emphasis on the lifelong nature of learning disabilities, its lack of an exclusion clause, and its reference to adaptive behaviour : Specific Learning Disabilities is a chronic condition of presumed neurological origin which selectively interferes with the development, intergration, and/or demonstration of verbal and/or nonverbal abilities. Specific Learning Disabilities exists as a distinct handicapping condition and varies in its manifestations and in degree of severity. Throuhgout life, the condition can affect selfsteem, education, vocation, socialization, and/or daily living activities. (ACLD, 1986, p. 15).

ICLD definition (1987). The ICLD, consisting of representatives from several federal agencies, was charged by Congress to report on several issues. Although Congress did not direct them to do so, they did formulate a definition. Their definition was essentially the same one as the 1981 NJCLD definition, except for two changes. It mentioned deficits in social skills as a type of learning disability, and it added attention deficit disorder as a potential co morbid condition with learning disabilities :

Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquistion and use of listening, speaking, reading, writing, reasoning, or mathematical abilities, or of social skills. These disorders are intrinstic to the indivicual and presumed to be due to central

nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g., sensory impairment, mental retardation, social and emotional disturbance), with socioenvironmental influences (e.g., cultural differences, insufficient or inappropriate instruction, psychogenic factors), and especially with attention deficit disorder, all of which may cause learning problems, a learning disability is not the direct result of those conditions or influences. (ICLD, 1987, p. 222) *NJCLD revised definition (1988)*. The NJCLD revised definition was in response to the LDA definition's emphasis on the lifelong nature of learning disabilities and the ICLD's listing of social skills deficits as a type of learning disability. The NJCLD revised definition agreed with the former but disagreed with the latter : Learning disabilities is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems of selfregulatory behaviours, social perception, and social interaction may exist with learning disabilities but do not by themselves constitute a learning disability. Although learning disabilities may occur concomitantly with other handicapping conditions (for example, sensory impairment, mental retardation, serious emotional disturbance) or with extrinsic influences (such as cultural differences, insufficient or inappropriate instruction), they are not the result of those conditions or influences. (NJCLD, 1988, p. 1). Individuals with Disabilities Education Act (IDEA) Reauthorized definition (1997). The definition in federal law has remained virtually unchanged since the one included in P.L. 94-142 :

A. IN GENERAL. —The term "specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken, or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.

B. DISORDERS INCLUDED.—Such term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasis.

C. DISORDERS NOT INCLUDED.—Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (IDEA Amendments of 1997, Sec. 602(26), p. 13)

Continuation or Research Strands of the Learning Disabilities Research Institutes As we noted earlier, Keogh (1983) noted that four of the learning disabilities research institutes funded by the USOE in the late 1970s and early 1980s (Columbia University, University of Illinois at Chicago, University of Kansas, University of Minnesota, and University of Virginia) approached learning disabilities as a strategic, information processing problem and developed their intervention within this framework. She pointed out that the institutes' data on outcomes were very promising. McKinney (1983) reported that the institutes' intervention reserach demonstrated that students with learning disabilities are capable of learning taks-appropriate strategies that enable them to succeed in academic learning and adaptive functioning. Although it is conjecture, it is easy to postulate that the institutes' rigorous research standardsand encouraging findings provided a springboard for future reserach. Columbia University. The Columbia insitute's research in reading most likely helped facilitate the proliferation of reading intervention reserach that has occured in the field of learning disabilities. For example, Lyon (1988) reported that the National Institutes of Health (NIH) has received more than $25 million to study how students with and without disabilities learn to read. Today, findings from the NIH studies are having a significant impact on the reading instruction provided youngsters with learning disabilities. Judith Birch of Columbia University recently teamed with numerous NIH researchers to develop a very informative video series that present research-based practices in teaching reading to students with learning disabilities.

According to public law 19-230, section 602-15 (April 13, 1970) "Children with specific learning disabilities" means those children who have a disorder in one or more of the basic psychological processes involved in understanding of using language, spoken or written which disorder may manifest itself in imperfect ability to listen think, speak, read, write, spell or do mathematical calculation such disorders include such condtions as perceptual handicaps brain injury, minimal brain dysfunction, dyslexia and developmental aphasia.

Those children who suffer from learning problem due to visual hearing or any physical disability they are not included under this section. The children who also suffer from mental retardation, emotional disorder or any environmental disorder are not included under LD. This definition has two dimensions.

1. The children with learning, disabilities face the problems in hearing, thinking, speaking, reading, writing, spelling, mathematical calculations etc.
2. They have no such problem which them physical, mental or behavioural handicapped.

Public law : 94-142 has accepted above definition Federal Registar (1977) has given importance on fours dimension of this definition.

1. Academic difficulties :

The children with learning disabilities suffer from some problem in education and mathematical calculations also than the other children of some age.

2. Descrepancey between potential and achievement :

The children with learning disabilities have poor educational achievement rather than their cognitive capacity this is also called apitude achievement discrepancy.

3. Exclusion of other factors :

If a child faces learning problem due to visual disability, hearing disability or speech and language disorder or mental retardation, any physical problem, emotional disorder or any environmental disorder we can't say that the child is learning disabled.

4. Neurological disorder :

A child can suffer from some learning problems due to neurological disability. We cannot categorize him/her under learning disability.

National Joint Committee (1991) has given a definition "Learning disabilities are a generic term that refer to a heterogeneous group of disorders that are manifested by significant difficulties in the acquisition and use of writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual and are presuemed to be due to central nervous system dysfunctions. Even though a learning disability may occur with other handicapped conditions (e.g. sensory impairment, mental retardation, social and emotional disturbances, inssufficient or inappropriate instruction, psychogical factors). It is not the real result of those conditions or influences."

According to the definition of National Joind Committee (1991) 'Central nervous system dysfunction refers to there is no damage in the brain or in the system of

perception of the child. But it has some different activities in their brain rather than other general children.

In America, office of Education (1997) has given a definition about learning disability." A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written which may manifest itself in on imperfect ability to listen; think, speak, read, write, spell or do mathematical calculation. The term includes such conditions as perceptual handicaps brain injury, minimum brain dysfunction, dyslexia and developmental aphasia. The term does not include children who have learning problem which are the result of visual, hearing or motor handicaps, mental retardation, and emotional disturbance or of environmental, cultural or economic disadvantage.

Therefore, according to we can say that learning disability which is a problem is related with one or more psychological process of the children in about the use of oral and written language and understanding the meaning. This kind of disability is speaking, reading, writing, spelling, or mathematical calculations. This disability is related with the perceptual conditions, brain injury, minimal brain dysfunction, dyslexia, developmental problems. But who have visual, hearing or motor disability, mental retardation, emotional disorder or social and economical barrier are not included under the term—learning disability.

1.1.3 Types and characteristic

The term "learning disability" is an umbrella term describing of more specific learning disabilities. Definitions of these problems are not standardized; however, we do know that learning disabilities are due to genetic and/or neurobiological factors or injury that alters brain functioning in a manner which affects one or more processes related to learning. These disorders are not due primarily to hearing and/ or vision problems, socio-economic factors, cultural or linguistic differences, lack of motivation or ineffectual teaching, althouhg these factors may further complicate the challenges faced by individuals with learning disabilities. Learning disabilities may co-exist with various conditions including attention, behavioural and emotional disorders, sensory impairments or other medical conditions.

The experts classify the learning disabilities on the basis of features surman of Rizzo suggest three type of learning disabilities.

1. Minimal Brain Dysfunction (MBD) :

The doctors think that MBD is a special type of learning disability. The damage in brain of the child causes this type of disability. The child who has damage in his/her brain may show some behavioural problems such as per concentration irritability, slowness of thought, forgetfulness, impulsive behavour, easily included fatigue etc.

Kurt Goldstein (1942) noticed that the persons who got injury in their brain in the First World War lost their capacity of abstract thought.

Thereafter Strauss & Kephart (1955), Strauss & Lehtinen (1947), Werner & Strauss (1940) et. Al. Decided from their experiments that some behavioural approached are related with the damage of brain. These are very high activity level, poor attentionspan, distractibility, impulsive behaviour and emotional instability etc. These behaviour are known as strauss are know as strauss syndrome or Brain Injured syndrome. Strauss did not use the tern learning disability. He thought that through the above problems were seen among the children but no damage of the brain was proved. So these types of children are called 'Strauss Syndrome Children or 'Minimal Brain Dysfunction children.'

Clements & Peters (1962) indicated ten features of children with MBT. These are hyperactivity, specific learning deficits in the presence of normal intelligence, perceptual motor deficits, impulsivity, emotional, short attention span, coordination deficits, distractibility, unclear neurological sign; frequently abnormal E.E.G.S etc.

2. Perceptual motor disabilities :

Percepetion is a process by which any living being make him conscious through his sense organs about his environment. Perceptual motor mence relation and balance in between visual perception and activity based behaviour. Perceptual—motor process is very important motor process is very important for classroom learning.

Kephan (1960) suggested that the perceptual motor problem was a cause of learning disability. He thought that the problem started in development disorder. There after the researches who work with the problems of learning disability increase their thought about perceptual and perceptual motor development. Werner & Strauss stated that if any damage accouterd in central nervous system of the child the perceptual motor development was not

balanced. Many reserachers have followed him. They agree with themselves that a relation is present in between perceptual motor ability and academic achievement.

Barsch (1965), Getman (1065), Frastig (1964) et.,al. indicate that the perceptual motor disability is an another type of learning disability.

3. **Psycholinguistic or language disability :**

Language disability is also accepted as a type of learning disability. The utility of language is very important for learning. The language disability has three types.

- Inner Language Disorder
- Receptive Language Disorder
- Expressive Language Disorder

Academic Difficulties :

American National Institute of Health has classified Academic Learning Disability into three types :

- Dyslexia — Difficulty reading
- Dysgraphia — Difficulty writing
- Dyscalculia — Difficulty doing math.

What is dyslexia ?

Children who have an average or above IQ and are reading 1 1/2 grades or more below grade level may be dyslexic. True dyslexia affects about 3 to 6 percent of the population yet in some parts of the country up to 50% of the students are not reading at grade level. This means that the reason for most children not reading at grade level is ineffective reading instruction. The dyslexic child often suffers from having a specific learning disability as well as being exposed to ineffective instruction.

Children may have dyslexia or a learning if they have one or more of the following symptoms :

- Letter or word reversals when reading. (Such as was/saw, b/d, p/q).
- Letter or word reversals when writing.

- Difficulty repeating what is said to them.
- Poor handwriting or printing ability.
- Poor drawing ability.
- Reversing letters or words when spelling words that are presented orally.
- Difficulty comprehending written or spoken directions.
- Difficulty with right—left directionality.
- Difficulty understanding or remembering what is said to them.
- Difficulty understanding or remembering what they have just read.
- Difficulty putting their thoughts on paper.

Children with dyslexia do not exhibit these symptoms due to poor vision or hearing but because of brain dysfunction. The eye and ears are working properly but the lower centers of the brain scramble the images or sounds befor they reach the higher (more intelligent) centers of the brain. This causes confusion as well as frustration for the learner.

When a child is having difficulty learning, a comprehensive neurodevelopment exam is important. This includes testing of hearing, vision, neurological development, coordination, visual perception, audtioryt perception, intelligence, and academic achievement.

Often, perception problems can be helped with simple exercises which either help to improve a specific problem or teach techniques to compensate for a problem. These often can be done at home. In a few cases, a referral to an educational or speech therapist may be helpful.

What causes dyslexia and reading problems ?

The main reasons for reading problems are :

- Ineffective reading instruction
- Auditory perception difficulties
- Language processing difficulties.

Over 180 research studies to date have proven that phonics is the BEST WAY

to teach reading to all students. They also have shown that phonics is the ONLY WAY to teach reading to students with dyslexia and other learning disabilities.

Unfortunately, 80% of our nations shcools do not use an intensified phonics approach for reading instruction. They either use the whole word (see & say) approach or a cursory use of phoncis along with the whole word method.

Whihe most people can learn to read using the whole word approach, it is not the best way to learn. It teaches through memorization of word pictures and guessing. Unlike Chinese or Japanese which are picture languages, the English language is a phonetic language. With the exception of the United States which dropped phonics in the 1930's, all other countries that have a phonetic language, teach reading through phonics.

There are only 44 sounds while there are about 1 million words in English. These facts readily explain why having to memorize 44 sounds as opposed to memorizing hundreds of thousands of words is the most efficient way to learn to read.

Reading and writing is simply "talking on paper." Children learn to talk by imitating sounds and then combining the sounds to form words. The brain is programmed to learn language in this fashion. Therefore, the most efficient way to learn to read is through phonics because it teaches children to read the same way they learned to talk.

Children and adults who do not learn to read through an intensive phonics program often have one or more of the following symptoms :

- Below grade level reading achievement
- Slow reading
- Poor comprehension
- Fatigue after reading only for a short while
- Poor spelling skills
- Lack of enjoyment from reading

Some children have auditory discrimination problems. This may have been the result of having chronic ear infections when they were young. Others may be born with this learning disability. Correction involves educational exercises to train the brain in discrimination and to over teach the formation of the sounds used speaking and reading.

Another group of children have visual perception problems. They may actually reverse lertters or words. They have difficuluty matching the word image on the page with a previously stored image in their brain. Exercises that train the brain to "see" more accurately may help but instruction with phonics is the best approach to overcome this problems.

Language development problems can contribute to poor reading and listening comprehension along with difficulty in verbal and written expression. Learning appropriate word attack skills through phonics along with special help in receptive and/or expressive language skills improves this type of learning disability.

Helping Children with Reversals :

It is not unusual for children to reverse letters and words when they read or write up to the age of 6 or 7. This is due to immaturity in brain development. Children who have problems with reversals usually also have problems with left-right directionality. Below are some exercise that have been found to help improve directionality and reduce reversals. Symptoms :

Spatial confusion—unable to differentiate left-right, on self, other, or paper.

Confuses letter pairs as b-d, m-w, p-q. Confuses words such as was-saw, on-no.

Remediation :

1. Simplify tasks so that only one new discrimination is made at a time.
2. Make each simple discrimination automatic before the next one is introduced. Overteach 'b", then overteach 'd", before presenting both together.
3. Each discrimination that causes repeated errors should be worked with by itself until the problem is overcome.
4. Trace, then write, the confused letter or word and pronounce it as written.
5. Use short frequent practice periods. Lengthen the time between practice session as the material is retained.
6. If the child is confused about his own left/right, use a ring, watch, ribbon or band on his writing arem. Colour cue side of desk or paper or word as a starting place.
7. Gradually increase the difficulty of material to discriminate. If errors are made, go back to simple practice.
8. Suggestions for Improving Laterality :

- Trace hands on paper. Label "right", "left".
- Play "Simon Syas" – "Touch right foot; raise left hand," etc.
- Child follows the directions in drawing lines up, down, right ot left, etc. and in touching parts of body.
- Child connects dots on blackboard to make a completed pattern; repeats process on paper.
- Child shows hands in sequence pattern : left, right, left, right, etc. Use marching as a variation.
- Child names objects on right and on left. He moves to different parts of the room and repeats.
- Arrange story pictures in sequence, left to right.
- Use lined paper for writing.
- Use weighted wristband to designate right or left hand.
- Tracing activities, left to right. Mark left with small "x." Use colour tracing to repeat.
- When begnning writing the lessons teach the child to begin as close to left edge of sheet as possible (then can move only toward the right).
- In reading, use markers, "windows," and other left-to-right directional aids.

What is dysgraphia ?

Dysgraphia means difficulty with handwriting. There are several different kinds of dysgraphia. Some people with dysgraphia have handwriting that is often illegible and shows irregular and inconsistent letter formations. Others write legibly, but very slowly and/or very small. When these indicuduals revert to printing, as they often do, their writing is often a random mixture of upper and lower case letters. In all cases of dysgraphia, writing requires inordinate amounts of energy, stamina and time.

Dysgraphia can interfere with a student's ability to express ideas. Expressive writing requires a student to synchronize many mental functions at once : organization, memory, attention, motor skill, and various aspects of language ability. Automatic accurate handwriting is the foundation for his juggling act. In the complexity of remembering where to put the pencil and how to form each letter, a dysgraphia student forgets what he or she meant to express. Dysgraphia can cause low classroom productivity, incomplete homework assignments, and difficulty in focusing attention.

Emotional factors arising from dysgraphia often exacerbate matters. At an early age, these students are asked to forego recess to finish copying mateiral from the board, and are likely to be sent home at the end of the day with a sheaf of unfinished papers to be completed. They are asked to recopy their work but the second attempt is often no better than the first. Because they are often bright and good at reading, their failure to produce acceptable work is blamed on laziness or carelessness. The resulting angar and frustration can prevent their ever reaching their true potential.

What cause dysgraphia ?

A few people with dysgraphia lack only the fine-motor coordination to produce legible handwriting, but some may have a physical tremor that interferes with writing. In most cases, however, several brain systems interact to produce dysgraphia. Some experts believe that dysgraphia involves a dysfunction in the interaction between the two main brain systems that allows a person to translate mental into written language (phoneme-to-grapheme translation, i.e. Sound to symbol, and lexicon-to-grapheme translation, i.e. mental to written word). Other studies have shown that split attention, memory load, and familiarity of graphic material affect writing ability. Typically, a person with illlegible handwriting has a combination of fine-motor difficuluty, inability to revisualize letters, and inability to remember the motor patterns of letter forms.

Who is qualified to diagnose dysgraphia ?

Dysgraphia cannot be diagnosed solely by looking at a handwriting sample. A qualified clinician must directly test the individual. Such a test includes writing self-generated sentences and paragraphs and coyping age-appropiate text. The examiner assesses not only the finished product, but also the process, including posture, pencil grip, fatigue, cramping or tremor of the writing hand, eyedness and handedness, and other factors. The examiner may assess fine-motor speed with finger-tapping and wrist turning.

What is the treatment for dysgraphia ?

Prevention, remediation and accommodation are all important elements in the treatment of dysgraphia. Many problems can be prevented by early training. Young children in kindergarten and grade one should learn to form letters correctly; kinesthetic memory is powerful and incorrect habits are very difficult to eradicate.

Muscle training and over-learning good techniques are both critical for the

remediation of dysgraphia. Specifically designed exercises are needed to increase strength and dexterity. A specialist can recommend the most appropriate plan of exercises. For all students, kinesthetic writing, that is writing with eyes closed or averted, is a powerful reinforce. Work needs always to begin with the formation of individual letters written in isolation. Alphabets need to be practiced daily, often for months.

Finally, individuals can benefit from a variety of modifications and accommodations. One effective method is to teach the use of a word processor, bypassing the complex motor demands of handwriting. Many students may find learning the keyboard by the alphabet method easier than beginning with the home keys. For many, touch typing offers a whole new opportunity to learn to spell through a different kinesthetic mode. Students should also experiment with different writng tools; some people with dysgraphia may find pencil grips helpful. Other bypass methods include allowing a student to answer questions orally or into a tape recorder instead of writing, modifying written assignments so that less writing is required, and allowing extended time to complete tests and assignments. Copying from the board is an especially difficulut task. Teachers need to provide notes. Photocopying the notes of another student is one possibility. Providing an outline, with spaces left for the student to fill in information is another. Writing on a slightly, inclined plane may be helpful.

Dyscalculia—Difficuluty doing math :

Dyscalculia is difficulty in learning or comprehending arithmetic, such as difficulty in understanding numbers, learning how to mainpulate numbers, and learning facts in mathematics. It is generally seen as a specific developmental disorder. Dyscalculia can occur in people from across the whole IQ range, often, but not always, involving difficulties with time, measurement, and spatial reasoning. Estimates of the prevalence of dyscalculia range between 3 and 6% of the population A quarter of children with dyscalculia have ADHD. Mathematical disabilities can occur as the result of some types of brain injury, in which case the proper term is acalculia, to distinguish it from dyscalculia which is of innate, gentic or developmental origin. Dyscalculia has been associated with female children who have Turner syndrome.

Symptoms :

The following are seen in primary school, and well established by educational researchers :

1. **Delay in counting**. Five to seven year-old dyscalculic children show less understanding of basic conuting principles.
2. **Delay in using counting strategies for addition**. Dyscalculic children tend to keep using inefficient strategies for calculating addtion facts longer than their peers.
3. **Difficulties in memorizing arithmetic facts**. Dyscalculic children have great difficulty in memorizing simple addition, substraction and multiplication facts (eg. 5 + 4 = 9), and this difficulty persists up to at least the age of thirteen. [6-10]
4. **Lack of "number senese"**. Dyscalculic children may have a fundamental difficulty in understanding quantity. They are slower at even very simple quantity tasks suxh as comparing two numbers (which is bigger, 7 or 9?), and saying how many there are for groups of 1-3 objects. The brain areas which appear to be affected in dyscalculia are areas which are specialised to represent quantity.
5. **Less automatic processing of written numbers**. In most of us, reading the symbol "7" immediately causes our sense of quantity to be assessed. In dyscalculic individuals this access appears to be slower and more effortful. Thus dyscaculic children may have difficulty in linking written or spoken numbers to the idea of quantity.

Dyscalculia involves frequent difficulties with everyday arithmetic tasks like the following :

- Difficulty reading analog clocks
- Difficulty stating which of two numbers is larger
- Inability to comprhend financial planning or budgeting, sometimes even at a basic level, for example, estimating the cost of the items in a shopping basket or balancing a checkbook
- Difficuluty with multiplication-tables, and subtraction-tables, addition tables, division tables, mental arithemetic, etc.
- Difficulty with conceptualizing time and judging the passing of time. May by chronically late or early.

- Problems with differentiating between left and right
- Inability to viusalize mentally
- Difficulty reading musical notation
- Difficulty with choreographed dance steps
- Difficulty working backwards in time, (e.g. What time to leave if needing to be somewhere at 'X' time)
- Difficulty comprehending thrings relating to occurrneces in different time zones
- Difficulty navigating or mentally "turning" the map to face the current direction rather than the common North = Top usage.
- Having particular difficulty mentally estimating the measurement of an object or distance (e.g., whether something is 10 or 20 feet (3 or 6 meters) awya).
- Inability to grasp and remember mathematical concepts, rules, formulae, and sequences
- Inability to concentrate on mentally intensive tasks
- Mistaken recollection of names. Poor name/face retrieval. May substitute names beginning with same letter.

1.2 ❑ Tools and areas of Assessment

Structure :

1.2.1 Identification and Assessment :

1.2.2 Tools

1.2.3 Assessment Strategies

Introduction :

According to the discrepancy model, L.D., students have discrepancy between their academic performance and intellectual ability. "The child does not achieve adequently for the child's age or meet state–approved grade–lelvel standsard in one or more of the following areas (i) oral expression, (ii) listening cooperation, (iii), (iv) basic reading & writing skills, (v) reading comprehension, (vi) mathematics calculation or (vii) mathematical problem solving; or that the child does not make sufficient progress ot meet state or age approved gread–level standards."

Objectives :

To learn Identification and Assessment of Learning disability Students

1.2.1 Identification and Assessment :

For identification of learning disability, educational assessment is essential. Educational assessment is multi-dimensional process that involves much more that test administration. "Assessment is the process of collecting data for the purpose of making about students (Satvia & Ysseldyke, 1995). McLoughlin and Lewis (1994) discuss five primary purpose of educational assesement :

(a) Screening to locate who may have learning difficulties.

(b) Determining elitibility i.e., collecting data that enable diagnosticians to identify a student as having learning difficulty.

(c) Planning a program for placement and specific interventions.

(d) Monitoring students progress through periodic data assessment.

(e) Evaluating a programme annually in remediation of the learning practices.

In USA, Pulic Law : 94-142 (November 1975) ensures that all students with disabilities receive a free, appropriate public education for which assessment must be done in non-discriminatory or unbaised manner. Therefore, PI : 94-142 (1975) established a set of procedures to protest against inappropriate assessment and placement practice.

1.2.2 Tools

For learning disabled student we may use some of tools for the assessment i.e.

- Reading Achievement – Swarup Mehata.
- NIVANS BATTERY TEST
- Visual Motor Perceptual Measure (Gestalt Test)
- Screening Check – List of LD
- Auditory Skill Test – Wood Cock
- Psycho Educational Battery – Wood Cock & Johnson.

1.2.3 Assessment Strategies :

Assessment learning disabilities requires that we assess an individual students's academic and social learning. However, besides finding out what a student knows or can do, we also must have a basis for comparing the student's performance to what we assume is normal or typical for students similar in age, gender, cultural group, intelligence, and opportunities to learn. The same strategies are used to assess learning disabilities and all students' learning, but particular attention is paid in the former to low performance in specific areas differs from what the students's other characteristics lead us to expect (Hallahan, Kauffiman & Lioyd, 1999).

Various assessment strategies include :

(a) Neuro–Psychological assessment—focuses on how brain function affects learning

(b) Contextual assessments which includes :

  (i) Interviews with the student and important and others.

(ii) Observations of the student in the classroom and other place in school.

(iii) Error analysis to discover predictable mistakes.

(c) Standardized testing, which includes :

(i) Norm referenced tests of cognitive ability and achievement–compare the student to a large normative group.

(ii) Criterion–referenced tests–what specific standards of performance the student has reached.

(iii) Non–referenced tests–may reveal how the students approach problems.

(d) Teacher–made tests–cover material presented in class.

(e) Curriculum–based assessment–systemiatic and frequent sampling of the student's performance on the instructional tasks in the daily curriculum.

(f) Behavioural assessment–observation and recording of specific target behaviours.

(g) Interactive assessment–observation of the students response to instruction during testing.

(h) Authentic assessment, which include :

(i) Performance assessment–samples of what the student can do following might be used for performance assessment.

- Constructed–response items, in which the student must offer a response rather than choose from alternatives
- Essays, letters, instructions, speeches or oral response to questions
- Experiments and their results or reports
- Exhibitions and other performances

(ii) Portfolio assessment–collections of students work over a period of time.

1.3 ❑ Strategies for reading, writing and maths

Structure

1.3.1 Introduction

The strategy is method that the teacher can use to help the students to complete a given tas, or a way for the student to think about the task is explained. Therefore, such strategies of teaching are needed that help a learner with learning disabilities to acquire new information to solve problems and to transfer learning to related situations. Here are the six characteristic of effective teaching strategies (Ibid, p. 148-149)

(a) The strategy takes account of how the students is currently thinkign about the task.

(b) The strategy provides for both the action of the teacher and the action of the student.

(c) The strategy encourages generalization and transfer.

(d) The strategy matches the highest level of thinking which the student is capable.

(e) The strategy generated through teacher student interaction.

Therfore, the teachers must know how the student is currently thinking to stop providing misdirected instruction. So the teacher will carefully understant students mental structures, what the students need to learn, imagine the steps in between, generate disequilibrium, teachers switches roles to move to new step in the teaching process, and playing with the new concept to stabilize the new structure and transfer likely.

1.3.2 Objective :

To learn strategy of reading for learning Disbality students

To learn strategy of writing for Learning Disbality students

To learn strategy of mathematics for Learning Disbality students

1.3.3 Reading Strategies :

Reading involves skill, it involves thinking and affects the entire personlity of the reader. It makes a man perfect. Reading means reading with comprehension and with logical thinking. It is the key to the wealth of experience. It includes learning, reflection, judgement, analysis and synthesis, problem solving behaviour, inferenece and organization, comparison of data, or what is being read (Throndike)

Some of the following suggestion and strategies may help children who are experiencing problems with decoding, comprehension, or reading retention. Many of those listed are accommodations that work around a child's differences by offereing alternative approaches at home and at school. Look for those thay you think might work best and, when applicable, talk to your child's teacher about using some of them in class.

■ **Play word games.**

Word games and puzzles are fun and also build vocabulary and word understanding. Try crossword puzzles, word bingo, etc.

■ **Read every day.**

Encourage children to read directions, labels and signs in the classroom, at home, in the car, and at stores or shops, and have them take turns reading aloud with a classmate, parent, or sibling. Discuss in class or at home what you are reading.

■ **Model reading as an enjoyable activity.**

You might informally discuss what you are reading with your child or let him or her see family members or teachers enjoying reading. Have DEAR time several times a week where everyone "Drops Everything And Reads" for 20 minutes.

■ **Put learning to use.**

Help children remember by having them explain, discuss, or apply information they have just read, letting them "teach" you facts or ideas they have learned from their

reading, or encouraging them to act out characters from their reading selections.

■ **Listen to books.**

Child may benefit from listening to his or her textbooks and trade books on tape or by using assistive technologies like screen readers.

■ **Read to child every night.**

Read novel above his or her reading lelvel to stimulate and enrich language, creativity, and interest. Ask structured questions and encourage the child to predict multiple endings to each chapter.

■ **Engage children's senses while learning.**

Children with learning disabilities learn best when they use many of their senses to get information. Multisensory instruction allows the child to see, hear, touch, and act our words. For example, to learn letters children may read the printed letter, say the letter name, shape the letter out of clay, trace the letter onto paper, and form their bodies into the shape of the letter.

Remdiation in Reaidng :

Difficulties with reading fluency are nearly universal among individuals with learning disabilities in reading. Reading fluency is the ability to read text not just accurately, but also and effortlessly. Fluency is characterized by appropirate intonation and expression during oral reading, as well as by a high degree of accuracy and speed in recognizing individual words in the text. Accurate word decoding is necessary, thoug not sufficient, for fluent reading. Thus, a student who reads quickly, but wirh many decoding errors or substitutions of words, is not "fluent."

Reading flency is important for at least three reasons. First, if students need to put effort into reading individual words, they tend to lose comprehension. Second, students with poor fluency often experience reading as laborious and difficult, so they lose motivation to read. Lack of motivation to read results in less practice, further compounding the difficulties of struggling readers. And third, as they advance in school, students with poor flency have difficulty keeping up with the high volume of reading requird for academic success beyond the elementary grades. Some following remedial recommendation for reading disorder.

A. Errors in reading

1. Omissions : Omits letter. eg, Belt > Bet or whole words when reading. Remedy: Tech him to scan the complete word.

2. Additions and insertions : eg., play > played or care > careful. Remedy : Help to him to understand the context word, to comprehend the meaning of the what he is reading, to identify the word quickly; in choral reading and reading with a taped reading.

3. Substitutions : Substitute words which look the same. eg., house > home, guess > guest, us > biscuit. Remedy : Use flash cards, choral reading and rhyming.

4. Repetition : Repeating words. Remedy : Silent reading before loud reading, use phrase cards, develop stoke of sight words.

5. Reversals : Twist symbols like p>q, b>d, was>saw. Remdy : Establish the concepts of right and left, teach them to distinguish between letters like, P,p,q,h,m,r,e,a,d,q,f and use of colours.

6. Word by word Reading : Loses his place of reading, using no intonation, expression, punctuation, pausing. Remedy : Increase the peace of reading by moving a piece of paper, read along with the child in a faster pace, use flash card.

7. Sound Blending : Cat > Kat. Remedy : Meaningful word patterns and words in context.

B. Teachng word identification : Letter with similar configurations, eg., h-n, i-j, v-w, m-n, -d and pair words, lap-lip, bat-dad, tip-tin, house-horse.

C. Teach phonics : the (the, thin), ph (Phone, phantom) etc.

D. Teaching words meaning.

E. Comprehension skills.

Among students with reading disabilities, two patterns of difficulties are especially common. In the first pattern, a student has difficulty reading words accurately and also reads in a slow, labored fashion. In the second pattern, a student may have achieved reasonably accurate word decoding, especially after remediation in phonemic awareness and phonics, but still reads very slowly relative to other students his or her age.

Fluency deficits in individulas with reading disabilities may be linked to several underlying factors. One especially importan factor involves a cumulative lack of exposure to printed words. Struggling readers receive much less exposure to words

(e.g., through independent reading both in and out of school) than do skilled readers. If struggling readers' difficulties are not remediated early, this cumulative deficit in exposure to words may be extremely difficulut to ovecome. In addition, some scientific investigators have linked problems in developing reading fluency to underlying deficits in naming speed, or the speed with which children can retrieve the names of familiar items, such as letters or numbers. Other researchers view these difficulties as reflecting a single underlying phonological deficti, the core deficit in most individuals with reading disabilities.

The use of fluency measures in early identfication :

Measures involving fluency can be very useful in identifying at-risk readers in the early elementary grades. Depending on the age of the children, these measures may involve identifying letters, real words or nonsense (made-up) words out of context, or reading grade-appropriate passages. The measures are timed and the child's score is simply the number of letters or words read correctly per minute. Children must be tested individually because the measures involve oral reading; however, typically these measures are easy to administer, take only a few minutes of time, require only minimal training of teachers, and are excellent predictors of children's risk status. Thus, flency measures can be used in general education settings to monitor the progress of all children and to identify early those who are in need of additional help. Early identification and appropriate intervention (which may or may not include special education) can help to prevent the cumulative deficits which make it so difficult for older struggling readers to catch up to their age peers.

Instruction and remediation in fluency :

Once serious fluency problems have developed, they can be resistant to remediation. However, several approaches have shown promise for addressing fluency difficulties. An especially helpful technique involves repeated oral reading of text under timed conditions. In this technique, the teacher select an appropriate level passage—one that is not too difficult—for a child to read aloud repeatedly. The child rereads the passage until he or she reaches a predetermined criterion for accuracy and rate, then moves on to another, more difficult passage. A somewhat similar approach, but one that does not neccessarily use timing, involves having children reread familiar books aloud several times, with appropriate guidance and feedback from the teacher. Other approaches to developing reading fluency include the use of timed speed drill on individual words (e.g., common sight words), readers'

theatre, paired or partner reading, and encouraging independent reading (e.g., by making books available to children that are interesting and and at an appropriate level of difficulty).

Teaching basic phonics and skills for decoding multisyllabic words, such as syllabication strategies and structural analysis, is essential for students whose reading is not accurate. Without a foundation of accurate decoding, students cannot become fluent. However, by itself, phonics instruction will not meet students' needs for building fluency. Rather, fluency must be directly addressed, through the kinds of approaches discussed above, as part of a comprehensive program of reading instruction.

1.3.4 Strategies for writing :

Introduction :

Writing is both a social and a cognitive precess. In the world outside the classroom, people write to communicate with an audience, drawing on their knoledge of content and writing, strategies for planning and revising, and basic writing skills. Writing development and disabilities in terms of five components.

- the social context for writing
- the writer's knowledge
- planning processes
- text production
- evaluation and revision
- self-regulation

It will outline components of effective writing instruction, to help parents assess the quality of instruction in their child's classroom. The goals of good writing instruction for students with disabilities are the same as those for all students. All students need to develop their knowledge about the purposes and forms of writing, basic writing skills, strategies for planning and evaluating their work, and motivation. However, struggling writers need more support and more intensive, explicit instruction in skills and strategies.

A high-quality writing program will provide a balance between opportunities for children to engage in writing that is meaningful to them, and to receive explicit

instruction in the skills and strategies they need to become proficient writers. Development of the self-regulation strategies and motivation needed for independent writing are also important. The writing classroom should provide :

- a context for regular, meaningful writing
- instruction in handwriting, spelling, and sentence formation, as needed
- instruction in strategies for planning, revising, and self-regulation during the writing process
- attention to development of motivation for writing
- use of technology to support the writing process (this important topic will be addressed separately in a future article)

Developmental Hierarchy of Writing Tasks

i. scribbling

ii. Tracing – (a) Connected letters or figures
(b) Disconnected letter or figures

iii. Copying – (a) From a model
(b) From memory
(c) Symbolic and non-symbolic

iv. Completion tasks – (a) Figure,
(b) Word completion—supply missing letters and sentence completion.

v. Writing from direction : writing from letters as they are spoken,w writing words and sentences and supply missiing word, supply missing sentence.

Source : Central Processing Dysfunction in children : a review of Research J. C. Chalfant and M. A. Scheffin, NINDS Monograph no-9, Bethesde Md : U.S. Department of Health, Education and Welfare, 1969, p. 112.

Remediation :

According to mercer, (1997, pp, 466-469)

- Teacher should help the students develop a positive attitude towards handwriting encouraging progress and stressing the importance of the sill. In upper elementary grades and in secondary classrooms, greater emphasis should be placed on identifying specific deficits in student's daily routine work. Marketing must be on the basis of students handwriting quality.
- The teacher needs to help each student develop his skills in the area like

muscular control, eye hand cooridination and visual discrimination before the students is ready to begin handwriting.

- The proper position of the paper pencil must be taught before extensive handwriting.
- Multi-sensory approach should be used in teaching letter forms—vision, hearing and touch.
- Letter with easier strokes (viz. E, F, H, I, L, T, I, I, and t) may be taught first (before teaching b, f, h, p, q etc).

1.3.5 Strategy for Mathematics

Introduction :

Dyscalculia is a mathematics-related disability resulting from neurological dysfunction. Students who are diagnosed with Dyscalculia have average to above-average intellectual functioning and a significant discrepancy between their math skills and their chronological-age-peer norms. For a diagnosis of Dyscalculia, itmust be determined that the math deficit is not smiply related to issues such as poor instruction, vision, hearing or other physical problems, cultural or language differences, or developmental delays.

In Accommodating Math Students with Learning Disabilities, author Rochelle Kenyon lists the following strategies for teaching a student with math-related disabilities.

- Avoid memory overload : Assign manageble amounts of work as skills are learned.
- Build retention by providing review within a day or two of the initial learning of difficult skills.
- Provide supervised practice to prevent students from practicing misconceptions and "misrules."
- Make new learning meaningful by relating practice of subskills to the performance of the whole task.
- Reduce processing demands by preteaching component skills of algorithms and strategies.
- Help students to visualize math problems by drawing.
- Use visual and auditory examples.

- Use reala-life situations that make problems functional and applicable to everyday life.
- Do math problems on graph paper to keep the numbers in line.
- Use uncluttered worksheets to avoind too much visual information.
- Practice with age-appropriate games as motivational materials.
- Have students track their progress.
- Challenge critical thinking about real problems with problem solving.
- Use manipulatives and technology such as tape recorders or calculators.

This is was adapted from the following source : Garnett, K., Frank, B., & Fleischner, J. X. (1983). A strategies generalization approach to basic fact learning (addition and subtraction lessons, manuan #3; multiplication lesson, manual #5). Research Institute for the Study of Learning Disabilities. New York, NY : Teacher's College, Columbia University.

Some of the following math strateties and suggestions may help children who are experiencing problems with mathematics. Identify strategies that you think will help your child and, if appropriate, talk to your child's teacher about using some of the strategies in school.

■ **Maintain consistency and communication across school and home settings.**

Parents, tutors, and classroom teachers should coordinate and use the same instructional approach.

■ **Teach basic concepts using concrete object.**

For example, let children explore number concepts by counting the legs of a chair to find the number four or by subtracting crayons from a box. The progression from understanding concrete materials, pictorial representations, and abstract number representations may take some children longer than others.

■ **Provide specialized materials.**

To help childern organize their calculations, have them use graph paper (or lined paper turned sideways) to keep numbers in columns. Encourage the use of scrap paper to keep work neat, highlighters to underline key words and numbers, and manipulatives such as base-ten blocks or fraction bars.

■ **Make your expectations explicit.**

Tell children the procedures you would like them to use when solving a problem, model each procedure for them, then have them tell you what they are expected to do. Some students benefit by having a math notebook filled with examples of completed problems to which they can refer if they becomes overwhelmed or confused.

■ **Provide time for checking work.**

Emphasizing that completing math assignments is a process, encourage children to become comfortale reviewing their work, making changes, or asking questions when they are unsure of their answer.

■ **Give children opportunities to connect mathematical concepts to familiar situations.**

For example, when introducing measurement concepts, have children estimate their measurements before measuring classmates' and family members' heights or weighing their book bags' when empty and when full.

■ **Help children apply math concepts to new sitations.**

For example, show them how to use percentages to understand the price of a pair of shoes on sale at the mall or the amount of their allowance they spend on snacks.

■ **Provide access to programs or tutors that can help a child improve his or her math skills.**

Tutors can assist children with weak math sub-skills, such as multiplication and division. Provide tutors during summer months or after school to boost performance and ensure that the child retains his or her skills.

■ **Help children keep track of problematic areas.**

When doing math homework, children may benefit from having their most common errors listed on flashcards. They can then refer to the cards while completing their assignments.

■ **Play math games.**

To encourage automaticity with math facts, students may benefit from playing math games (i.e. dice, playing cards) and listening to commercially available audiotapes that provide a fun way of learning math facts. The PBS Parents Activity Search can help you find great games from PBS Children's television series.

Unit 1.4 : Curriculum Adaptation, IEP, Further Education

Structure

1.4.1. Introduction

There is no recipe for adapting general education currilculum to meet each student's needs. Each teacher, each student, each classroom is unique and adaptations are specific to each situation. Keep in mind that curriculum does not always need to be modified. By providing multi-level instruction you will find that adapting a lesson may not always be necessary. Differentiating instruction and providing multiple wasy assess allows more flexibility for students to meet the standards and requirements of the class. At other times, the curriculum can be made more accessible through accommodations. In addition, supports for one student may not necessarily be the same in all situations, e.g., a student who needs full time support from a paraporfessional for math may only need natural supports from peers for English, and no support for art for learning disability students. And, supports should not be determined by the disability lebel, instead supports should be used when the instructional or social activity warrants the need for assistance (Fisher and Frey, 2001). The forms and examples on the following pages provide information about curriculum and types of adaptations that could be considered in developing the appropriate strategy for a particular student.

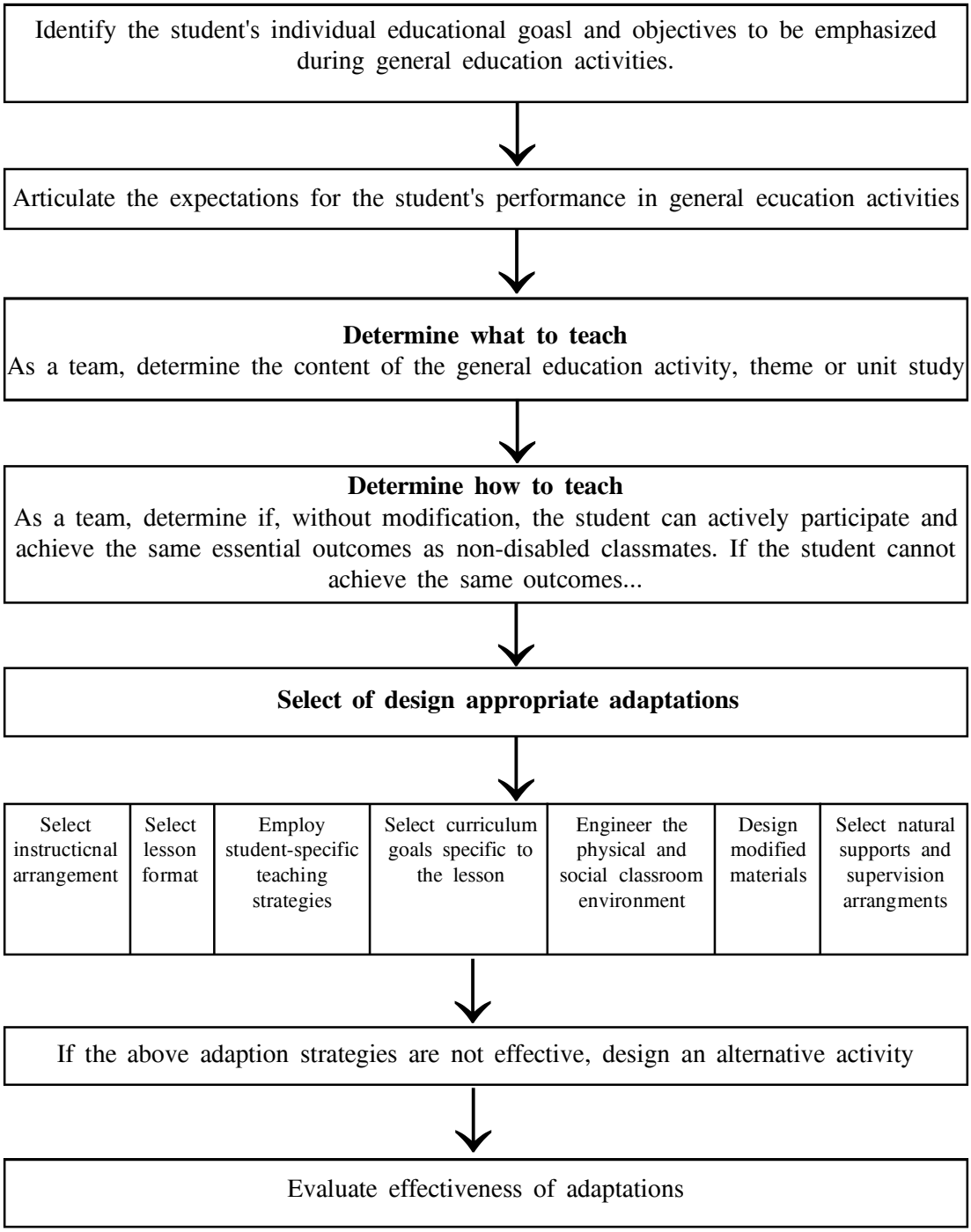
1.4.2. Objectives

To learn curriculum adaptation for L.D. students
To learn IEP for L.D. students
To learn further education for L.D. student

1.4.3. Curriculum Adaptation

A Curriculum Adaptation and Decision-making Process :

This decision-making flowchart casn be used to conceptualize the process of selecting and implementing curriculum adaptations. It should be used as a tool for a team in determing an individual student's needs.


Identify the student's individual educational goasl and objectives to be emphasized during general education activities.
Articulate the expectations for the student's performance in general ecucation activities
Determine what to teach
As a team, determine the content of the general education activity, theme or unit study
Determine how to teach
As a team, determine if, without modification, the student can actively participate and achieve the same essential outcomes as non-disabled classmates. If the student cannot achieve the same outcomes...
Select of design appropriate adaptations
Select instructicnal arrangement
Select lesson format
Employ student-specific teaching strategies
Select curriculum goals specific to the lesson
Engineer the physical and social classroom environment
Design modified materials
Select natural supports and supervision arrangments
If the above adaption strategies are not effective, design an alternative activity
Evaluate effectiveness of adaptations

A Curriculum Adaptation and Decision-making Model :

Examine the Structure of the Instruction :

1. Can the student activity participate in the lesson without modification ? Will the same essential outcome he achieved ?
2. Can the student's participation he increased by changing the instructional arrangement ?

   From traditional arrangements to :

   - Cooperative groups
   - Small groups
   - Peer partners
   - Peer or cross-age tutors
3. Can the student's participation be increased by changing the lesson format ?
   - Interdisciplinary / thematic units
   - Activity-based lessons, games, simulations, role-plays
   - Group investigation or discovery learning
   - Experiential lessons
   - Community-referenced lessons
4. Can the student's particiaption and understanding be increased by changing the delivery of instruction or teaching style ?

Examine the Demands and Evaluation Criteria of the Task

5. Will the student need adapted curricular goals ?
   - Adjust performance standards
   - Adjust pacing
   - Same content but less complex
   - Similar content with functional/direct applications
   - Adjust evaluation criteria system (grading)
   - Adjust management techniques

Examine the Learning Environment

6. Can the changes he made in the classroom environment or lesson location that will facilitate participation?

- Environmental / Physical arrangements
- Social rules
- Lesson location

Examine the Materials for Learning

7. Will different materials be needed to ensure participation?
   - Same content but variation in size, number, format
   - Additional or different materials/devices
   - Materials that allow a different mode of input
   - Materials that allow a different mode of output
   - Materials that reduce the level of adstraction of information

Examine the Support Structure

8. Will personal assistance be needed to ensure participation ?
   - From peers or the general education instruction ?
   - From the support facilitator ?
   - From therapists ?
   - From paraprofessionals ?
   - From others ?

Arranges Alternative Activities that Foster Participation and Interaction

9. Will a different activity need to be designed and offered for the student and a small group of peers ?
   - In the classroom
   - In other general education environments
   - In community-based environments

Curriculum Adaptations :

It is important to correlate adaptations with the IEP. In other words, we are not adapting for adaptations sake but, to meet the student's needs as identified on an IEP.

a. Curriculum as is. This is type we forget most frequently. We need to constantly be looking at the general education curriculum and asking if the students of IEPs may gain benefit from participating in the curriculum as is. We need to keep in mind that incident learning does occur. Curriculum as is supports outcomes as identified in standard curriclum.

b. Different objective within the same activity and curriculum. The student with an IEP works with all the other students in the classroom participating in the activity when possible but, with a different learning objective from the other students. This is where the principle of partial participation fits examples include.

- A student with a short attention span staying on task for 5 minutes.
- Using a switch to actis ate a communication deivce to share during a class discussion.
- Expressing one's thoughts by drawing ina journal instead of writing.
- Holding a book during reading time.
- Understanding the effect World War II has on the present rather than knowing the names and dates of key bettles.

c. Material or environmental adaptations. The material or environemental changes are utilized so that participation in the general education curriculum by the student with the IEP may occur. Examples include :

- 5 spelling words from the weekly list instead of the standard 20.
- Completely a cooking assignment by following picutre, directions rather than written direction.
- Changing the grouping of the class from large group to small groups (possible with the additional support staff).
- Chaging the instructional delivery from lecture to the cooperative learning format.
- Using a computer to write an assignment instead of paper and pencil.
- Reading a test to a student.
- Highlighting the important concepts in a textbook.
- Having the student listen to a taped textbook.
- Using enlarged print.

Move in this direction only when necessary

- Using an assistive technology device.
- Using visual cues such as picture and/or word schedules for those who have difficulty staying on task.
- Using a note taking guide listing the key concepts during a lecture.

d. Providing Physical assistance. Assistance from another person may be needed for a student to participate ina classroom activity. If possible, it is better to use natural supports (peers) as these will be the people always present in the student' life. If the use of peers is not possible, then either the support teadcher, the paraprofessional, the classroom teacher, the classroom aide, or a parent volunteer may provide the assistance. Most peers and staff will need training in the correct way of providing physical assistance. In addition, we need to keep in mind the principle of partial participations.

Examples include :

- Starting a computer for an student with an IEP to use.
- Guiding a hand during handwriting.
- Assisting in activating a swtich.
- Completing most of the steps of an activity and having a student with an IEP do the remainder.
- Pushing a student in a wheelchair to the next activity.

e. Alternative/substitue curriculum. This is sometimes referred to as functional curriculum as it usually involves the acpuisition of "life skills". The decision to use alternative/substitue curriculum is a major change and needs to be reflected on the IEP. This decision should be carefully made after weighing all or the pros and cons of using an alternative curriculum. The alternative curriculum may or may not take place in the general education classroom.

Examples include :

- Community-based instruction (which all students may benefit from!)
- Learning job skills in the school cafeteria.
- Learning how to use a communication device.
- Doing laundry for the athletic department.
- Learning cooking/grooming skills at the home.

Move in this direction only when necessary

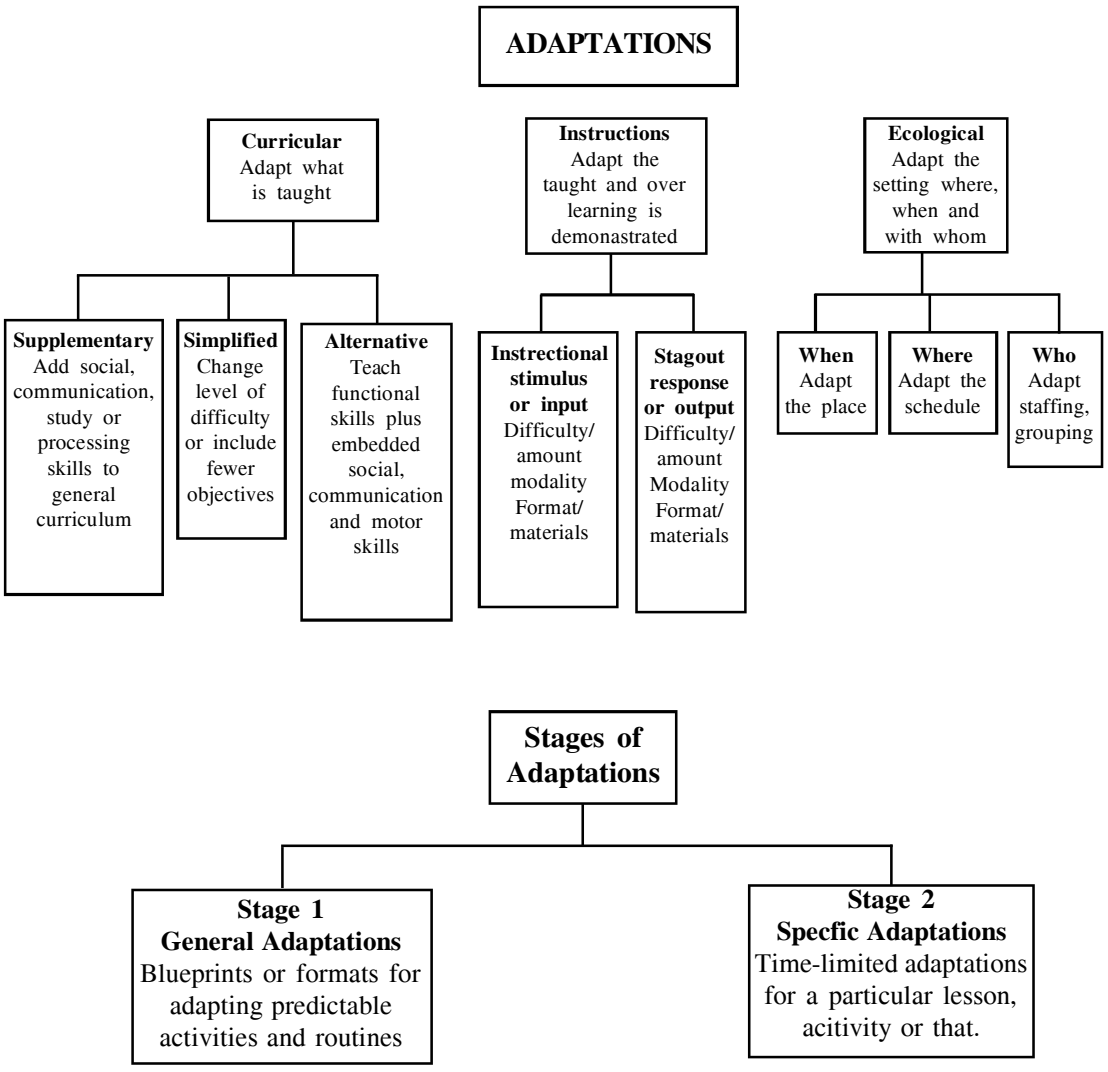
Overlap does occur among the five types of curriculum adaptation.

Nine Types of Adaptions :

Input	Output	Time
Adapt the way instruction is delivered to the learner. *For example :* Use different visual aids; plan more concrete examples; provide hands-on activities; place students in cooperative groups.	Adapt how the learner can respond to instruction *For example :* Allow a verbal vs. written response; use a communication book for students; allow students to show knowledge with hands on materials.	Adapt the time allotted and allowed for learning, task completion or testing. *For example :* Individualize a timeline for completing a task; ...learning differently (increase or decrease) for some learners.
Difficulty	**Level of Support**	**Size**
Adapt the skill level, problem type, or the rules on how the learner may approach the work. *For example :* Allow a calculator for math problems; simplify task directions; change rules to accommodate learner needs.	Increase the amount of personal assistance with specific learner. *For example :* Assign peer buddies, teaching assistants, peer tutors or crossage tutors.	Adapt the number of items that the learnier is expected to learn or compete. *For example :* Reduce the number of social studies terms a learner must learn at any one time.
Degree of Participation	**Alternate Goals**	**Substitute Curriculum**
Adapt the extent to which a learnier is actively involved in the ask. *For example :* In geography, have a student hold the globe, while others point out the locations.	Adapt the goals or outcome expectations while using the same materials. *For example :* In social studies, expect one student to be able to locate just the states while others learn to locate capitals as well.	Provide the different instruction and materials to meet a learner's individual goals. *For example :* Individualize a timeline for completing a task; pace learning differently (increase or decrease) for some learners.

From : Ebeling, D. G., Ed. D., Deschenes, C. M.Ed., & Sprague, J., Ph.D. (1994). *Adapting curriculum and instruction.* The Center for School and community Integration, Institute for the Study of Development Disabilities.

Adaptations :



From : Janney, R., Ph.D., and Snell, M., Ph.D. (2000) Modifying Schoolwork; Baltimore, MD; Paul Brooks Publishing Company

1.4.4 IEP

IEP

A federal law called the Individuals with Disabilities Education Act (IDEA) requires that public schools create an IEP for every child receiving special education services. Kids from age 3 through high school graduation or a maximum age of 22 (whichever comes first) may be eligible for an IEP. The IEP is meant to address each child's unique learning issues and include specific educational goals. It is legally binding document. The school must provide everything it promises in the IEP.

What does an IEP contain ?

IEPs are designed to meet kids' unique needs. That means that every IEP will look different. But by law, all IEPs must contain the following elements:

Child's present level of educational performance (PLOP) : This is thorough descripition of your child's current abilities, skills, weaknesses and strengths. It's the part of the IEP that explains how the child's learning issues affect his ability to learn the general education curriculum. PLOP (also sometimes called PLP or PLAAFP) includes details on how your child handles academic subjects and everyday or "functional" activities, like socializing.

The results of the child's evaluations and tests : This should include district-wide and state assessments.

Special education and related services to be provided : The IEP spells out what kinds of support and services your child will receive. If your child is going to have speech therapy, for instance, it will say how many minutes a week he will receive this therapy.

Accommodations and modifications : These help your child learn the general education curriculum. Accommodations are changes in *how* a child shows what he has learned. They can help your child work around his learning issues. For example, he may be given extra time on tests.

Supplementary aids and services : These are supports to help a child learn in the general education classroom. L.D. student included in general classroom. They might include a one-on-one, aide, highlighted classroom notes, equipment or assitive technology, such a software.

Annual educational goals : These should be realistic, achievable and measurble. The IEP lists the academic and functional skills that the IEP team thinks the child can achieve by the end of the year. Annual educational goals should help your child participate in the general education classroom. If the child has multiple or severe disabilities, the law requires that the IEP list short-term goals. These are also called objectives or benchmarks.

A description of how the child's progress will be measured and reported to you : By law, the IEP must explain how the school will track the child's progress toward goals. And it must describe how the school will share those results.

For instance, one goal might be that the child be able to read at a third-grade level. The IEP will specify how that will be tracked—informal and formal assessments, for instance—and how often those results will be reported to you. If these interim reports show that your child's progress has stalled, the IEP team may discuss new interventions.

An explanation of how much your child will participate in general education classes and extracurricular activities : Participation at the fullest level possible is required by law. This is called the least restrictive environement.

The date the IEP will go into effect : Many states have formal timelines for this. Depending on your child's age and situation, his IEP might also include :

A transition plan : This kicks in when the child turns. Transition planning includes services and support to help a student graduate from high school and achieve post-high school goals.

Extended school year services : Some students receive special educational services outside of the regular school year, such as during the summer or, less commonly, during extended breaks like winter break.

1.4.5. Further Education :

There is sometimes a misconception that people with learning disabilities will not opt for a college placement prior to attending a day-centre. There has often been limited scope for those with learning disabilities to progress into further education and full-time employment.

But people with learning disabilities may often feel that they want to expand their horizons or take their studies to a nwe level. Further education may offer a wider

range of options in terms of long-term planning. However, the focus on students with learning, disabilities tends to fall on shorter-term college studies, with less emphasis on progression to employment.

In some cases, a learning disabled person will progress to college, with only around 11% going on to employment. In other cases, the individual may simply progress to attending a day centre and not enter employment at all.

Therefore, people with learning disabilities may not alwasy be aware of the further education opportunities and support open to them.

Progression And Support :

The UK Government's white paper Valuing People asserts that people with learning disabilities should have the same rights and opportunities as everyone else with regards with post 16 education. Objective 7 of the Valuing People paper states, "To enable people with learning disabilities to lead full and purposeful lives within their community and to develop a range of friendships, activities and relationships." It also states that Learning Disability Partnership Boards, the Learning and Skills Council (LSC) as well as colleges should support choices and ambitions of people with learning disabilties, and that they should be able to realise their potential.

Person-Centered Planning and Further Education :

It is the way forward for supporting people with a learning disability into further education. This also includes getting carers and family involved in supporting planning in post-16 education opportunities, but with an emphasis on the student being at the heart of the provision rather than an assumption that they will have to fit into existing provisions.

1.5. ❐ Transition Education, Lifelong education :

1.5.1. Transition Education

The term transition refers to passing from one state or condition to another. Many important transitions occur throughout each person's life, and many of them are associated with predictable life events, such as beginning preschool, leaving elementary school, and entering middle adulthood. One of the most critical transition periods for students with learning disabilities (LD) is the transition from shcool to young adulthood. The 1997 amendments to the Individuls with Disabilities Education Act (IDEA) defined transition services for this particular transtion as : a coorinated set of activities for a student, with a disability, that: (a) is designed within an outcome oriented porcess, that promotes movement from school to post school activities, including postsecondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services independent living, or community participation; (b) is based on the studen'ts needs, taking into account the student's preferences and interest; (c) includes instruction, related services, community experiences, the development of employment and other post-school objectives, and when appropriate, acquisition of daily living skills and functional vocational evaluation (*602).

This concept is straightforward and fairly smiple, including three major components (storms, O'Leary, & Williams, 2000). First, every student and his or her family should be coached to (a) think about post ? high school goals and (b) develop a plan for how to achieve those goals. Second, a high school experience should be designed so that the student acquires the skills and competencies necessary to obtain his or her desired post ? high school goals. Finally, the linkages to post ? high schools

services, supports, and programs need to be idenfified and made before the student exits high school.

Transition Planning Important for Individuals with LD :

Even thouhg transition planning has been mandated for all students with L.D. for more than 10 years, transition planning for individuals with LD has lagged behind that of other groups. A major reason for this lack of attention has been an assumption that individuals with LD have a mild disability that primarily affects academic achievement; therefore, they have the ability to move from secondary to postsecondary environments without a lot of difficuly. Unfortunately, this is not the case for many students with LD. The results of a number of recent studies have suggested that many adolescents with LD do encounter difficulties in making the transition to adult life, including problems related to unemployment, underemployment, job changes, participation in community and leisure activities, pay, dependency on parents and others, satisfation wit employment, postsecondary academics, and functional skills.

1.5.2. Lifelong Education :

'Lifelong education' the "onging, voluntary, and slef-motivated" pursuit of knowledge for either personal or professional reasons. Therefore, it not only enhances social inclusion, active citizenship, and personal development, but also self-sustainability, rather than competitiveness and employability. The concept Lifelong Learning was introduced in Denmark as early as in 1971. Evoloved from the term "life-long learners" created by Leslie Watkins and used by Professor Clint Taylor (CSULA) and Superintendent for the Temple City Unified School District's mission statement in 1993, the term recognizes that learning is not confined to childhood or the classroom but takes place throughout life and in a range of situations. Allen Tough (1979), Canadian educator and researcher, asserts that almost 70% of learning projects as self-planned. As per normal life L.D. students can learn as lifelong learning processes.

1.6. Unit Summary

Learning Disability :

Liarning disability is a classification that includes several areas of functioning in which a person has difficulty learning in a typical manner, usually caused by an unknown factor or factors. Given the "difficulty learning in a typical manner", this does not exclude the ability to learn in a different manner. Therefore, some people can be more accurately described as having a "Learning Difference", thus avoiding any misconception of being disabled with a lack of ability to learn and possible negative stereotyping.

While *learning disability, learning disorder* and *learning difficulty* are often used interchangeably, they differ inmany ways. Disorder refers to significant learning problems in an academic area. These problems, however, are not enough to warrant an official diagnosis. Learning disability on the other hand, is an official clinical diagnosis, whereby the individual meets certain criteria, as determined by a professional (psychologist, pediatrician, etc.). The difference is in degree, frequency, and intensity of reported symptoms and problems, and thus the two should notbe confuses. When the term "learning disorder" is used, it describes a group of disorders characterzied by inadequate development of specific academic, language, and speech skills. Types of learning disorders include reading (dyslexia), mathematics (dyscalculia) and writing (dysgraphia).

Tools and Areas of Assessment :

Learning disabilities are neurological disorders that affect a person's ability to interpret information and create prbolems with language, coordination, self-control or the ability to concentrate. Learning disabilities can cuase difficulties in taska such as reading, writing and doing math. When a child is struggling there are stps that parents can take to help. Formal assessment tools are a key part of the process to finding and identifying a learning disorder and getting a child the right support.

Strategies for reading, writing and maths

Reading Strategies	Writing Strategies	Math Strategies
Strategies to see when reading.	The Essential Writing Skills:	Explore and investigage math ideas.
Access background knowledge.	Generate ideas in a variety of ways.	Connect new math ideas with what already know.
Predict what will be learnied or what will happen.	Organize ideas based on purpose for writing	Figure out the big ideas in math.
Figure out unknown words	Use a variety of sentence lengths and patterns	Computations quickly and accurately
Self-monitor and self-correct	Write so thoughts flow smoothly and are easy to read.	Makes reasonable estimations.
Make mental pictures.	Carefully chose the most effective words to express the ideas.	Use mental math
Connect what you read with what you already know.	Chose the tone and point of view that suit writing purpose	Make sense of problems
Extract information from texts, charts, graphs, maps, and illustrations.	Use personal style to make writing unique.	Use a variety of strategies to solve math problems.
Identify and interpret literary elements in different genres.	re-read, reflect, revise, and edit.	Explain and give reasons for math thinking.
Summarize what has been read		Work hard a math.
Make inferences and drew conclusions.		

Curriculum Adaptation :

Even a child with many needs is to be involved with non-disabled peers to the maximum extent appropriate. Just because a child has learning disabilities or needs

modifications to the general curriculum does not mean that he or she may be removed from the general education class. If a child is removed from the general education class for any part of the school day, the IEP team must include in the IEP an explanation for the child's nonparticipation.

Because accommodations can be so vital to helping children with disbilities access the general curriculum, participate in school (including extracurriculuar and nonacademic activities), and be educated alongside their peers without disabilities, IDEA reinforces their use again and again, in its requirements, in its definitions, and in its principles. The wealth of experience that the special education field has gained over the years since IDEA was first passed by Congress is the very resource you'll want to tap for more information on what accommodations are appropriate for students, given their disability, and how to make those adaptations to support their learning.

IEP

An individualized Education Program, or IEP, is an agreement between school and parent that outlines the special education and related services to be delivered to a child who has been found eligible for services under the Individuals with Disabilities Education Act (IDEA). The documdnt provides several important statements about the progress to be accomplished and the specific amounts of special education and related services to be delivered in order to achieve the desired progress. In addition, an IEP outlines to be furnished both in daily instructional settins and in state-and district-wide testing. It also details how progress will be determined and a method by which parents will be regularly advised of that progress.

Further Education

In terms of inclusiveness in education, this means providing adequate support services for people with varying degrees of learning disability that wish to enter into further educatin. This can include support such as helping a person with learning disabilities use public transport services and other services that they will need to use frequently in order to continue into independent further education.

Transition Education

A transtiion plan is the section of the Indivicualized Education Program (IEP) that outlines transition goals and servives for the L.D. student. The transition plan is based on a high school student's individula needs, strengths, skills, and interests.

Transition planning is used to identify and develop goals which need to be accmomplished during the current school year to assist the student in meeting his post-high school goals.

Lifelong Education

During the last fifty years, constant scientific and technological innovation and change has had a profound effect on learning needs and styles. Learning can no longer be divided into a place and time to acquire knowledge (school) and a place and time to apply the knolwdge acquired (the knowledge). Instead, learning can be seen as something that takes place on an ongoing basis from our daily interactions with others and with the world around us. It can take the form of formal learning or informal learning, or self-directed learning for L.D. students.

1.7. ‘‘Cheek your progress’’ :

1. What is Learning Disability ?
2. What is the characteristic of Learning Disability (L.D.) ?
3. What are the types of L. D.
4. Discuss about strategies for reading, writing and maths.
5. Discuss about Curriculum adaptation for L.D. students.
6. What is IEP ? Discuss about IEP for L.D. students.
7. What is Transition Education ? Discuss about transition education for L.D. students.

1.8. References :

Anderson, V. A., Catroppa, C., Rosenfeld, J., Haritou, F. & Morse, S. A. (2000). Recovery of memory function following traumatic brain injury in preschool children Brain Injury, 14, 679-692.

Bevington, J., & Wishart, J. G. (1999). The influence of classroom peers on cognitive performance in children with behavioural problems. British Journal of Educational Psychology, 69, 19-32.

Christenson, S. L., Thurlow, M. L., Ysseldyke, J. E., & McVioar, R. (1989).

Written language instruction for student with mild handicaps—Is there enough quality to ensure quality ? Learning Disability Quarterly, 12, 219-229.

Colletti, L. (1979). Relationship between pregnancy and birth complications and the later development of learning disabilities. Journal of Learning Disabilities, 12, 659-663.

Decker, S. N., & Defries, J. C. (1980). Cognitive abilities in families of reading disabled children. Journal of Learning Disabilities, 13, 517-522.

Dembinski, R. J., & Mauser, A. J. (1977). What parents of the learning disabled really want from professionals. Journal of Learning Disabilities, 10, 578-584.

Denton, C. A., Vaughn, S., & Fletcher, J. M. (2003). Bringing research-based pratice in reading intervention to scale. Learning Disabilities Research and Practice, 18, 201-211.

DeRuiter, J. A., & Wansart. W. L. (1982). Psychology of Learning Disabilities. London : Aspen Systems Corporation.

Dilshad, Heena Afreen M. (2006). Prevalence of learning difficulties/disability among primary shcool children : Effect on emotional problems and academic achievement. Unpublished M. Sc. Home Science Thesis. Department of Human Development, College or Rural Home Science, Dharwad.

Dybdahl, C. S., & Ryan, S. (2009). Inclusion for students with fetal alcohol syndrome : Classroom talk, about practice. Preventing School Failure, 53, 185-195.

Dyson. L. L. (1996). The experiences of families of children with learning disabilities : Parental stress, family functioning and sibling self-concept. Journal of Learning Disabilities, 29)3), 280-286.

Feagans, L., & McKinney, J. D. (1981). Pattern of exceptionality across domains in learning disabled children. Journal of Applied Developmental Psychology, 1, 313-323.

Fellers, G., & Saudargas, R. A. (1987). Classroom behaviours of LD and non-handicapped girls. Learning Disability Quarterly, 10, 231-236.

Gallagher, L. S. (1995). The impact of learning disabilities on families. Journal of Child Neurology, 10 (Suppl.-1), 112-113.

Graham, S., & Harris, K. R. (1988). Instructional recommendations for teaching writing to exceptional students. Exceptional Children, 54, 506-512.

Hallahan, D. P., & Kauffman, J. M., & Lloyd, J. W. (1999). Introduction to Learning Disabilities (Second Edition). Boston : Allyn and Bacon.

Hammill, D.D., & McNutt, G. (1981). Correlates of reading : The consensus of thirty years of co-relational research (PRO-ED Monograph No. 1). Austin. Texas : PRO-Ed.

Handwrek, M. L., & Marshall, R. M. (1998). Behavioural and emotional problems of students with learning disabilities, serious emotional disturbance, or both conditions. Journal of Learning Disabilities, 31, 327-338.

Hermann, K. (1959). Reading Disability : A Medical Study of Word Blindness and Related Handicaps, Springfield III : Charles C. Thomas.

Jordan, D. R. (1977). Dyslexia in the classroom (2nc Edn). Columbus, Ohio : Charles E. Merrill Publishing Company, pp.66-67.

Keenan, J., Betjemann, R., Wordsworth, S., DeFries, J., & Olson, R. (2006). Genetic and environmental influences on reading and listening comprehension. Journal of Research in Reading, 29(1), 75-91.

Lambie, R., & Daniels-Mohring. D. (1993). Family systems within educational contexts : Understanding Students with Special Needs. Denver : Love.

Lerner, J. W. (1981). Learning Disabilities : Theories, Diagnosis, and Teaching Strategies (3rd Edn.). Boston : Houghton-Mifflin Company.

Lerner, J. W., Lowenthal, B., & Lerner, S. R. (1995). Attention deficit disorders : Assessment and teaching. Pacific Grove, CA : Brooks/Cole.

Luria, A. R. (1970). Traumatic Aphasia, its symptoms, psychology and treatment. The Hague : Mouton.

McKinnery, J. D., & Speece, D. L. (1983). Classroom behaviour and the academic progress of learning disabled students. Journal of Applied Developmental Psychology, 4, 149-161.

Mercer, C. D. (1997). Students with Learning Disabilities. New Jersey : Merrill.

Morrow, C. E., Culbertson, J. L., Accornero, V. H., Xue, L., Anthony, J. C., & Bandstra, E. S. (2006). Learning disabilities and intellectual functioning in school aged children with prenatal cocaine exposure. Development Neuropsychology, 30, 901-931.

Muni, A., & Panigrahi (1997). Social support as a protective factor for the disadvantaged children. Journal of Community Guidance and Reserach, 15(1), 73-85.

Myklebust, H. R. (1954). Auditory disorders in children : A Manual for Differential Diagnosis. New York : Grune & Stratton.

Nakra, Anita (1998). Children and Learning Difficulties. New Delhi : Allied Published Ltd.

Nauda, B. P. (2012). Challenged children : Problems management : Kolkata Ankush Prakashana. 432-500.

Newcomer, P. L., & Barenbaum, E. M. (1991). The written composing ability of children with learning disabilties : A review of the literature from 1980 to 1990. Journal of Learning Disabilities, 24, 578-593.

Pennington, B. F. (1995). Genetics of learning disabilities. Journal of Child Neurology, 10 (Suppl. L, 69-77).

Peshawaria, R. (1992). Meeting Counselling needs of parents of disabled children. Samadhan, January, 1992, 10-11.

Reis, Sally M., & Colbert, Robert (2004). Counselling Needs of Academically Talented Students with Learning Disabilities. From internet.

Robinson, N. M., & Robinson, H. B. (1976). The menatally retarded child : A psychological approach (2nd Edn.). New York : Mcgraw-Hill.

Sharma, G. (1993). Tackling learning disabilities. The Hindu, V. Shields, D. (1989). Learning Disabilities, The World Book Encyclopaedia, London, World Book, Inc., 12, 165-166.

Slate, J. R., & Saudargas, R. A. (1986). Differences in learning disabled and average students classroom behaviour. Learning Disablity Quarterly, 9, 61-67.

Stevenson, J., Richman, N., & Graham, P. (1985). Behaviour problems and language abilties at three years and behaviour deviance at 8 years. Journal of Child Psychology and Psychiatry, 26, 215-230.

Turnbull, A. P., & Turnbull, H. R. III (1990). Families, Professionals and Exceptionality : A special Partnership (2nd Edn.). Upper Saddle River, N. J. : Merril../Prentice Hall.

Turnbull H. R. III, & Turnbull A.P. (1985), Parents speak out : That and noe (2nd ed.). pper addle River, N. J.: Merrill/Prentice Hall.

Wordsworth, S. J., DeFries, J.C., & Olson, R. K., & Wilcutt, E. G. (2007). Colorado Longitudinal Twin Study of Reading Disability. Annals of Dyslexia, 57, 137-160.

Unit - 2 ❐ Intellectual Disability: Nature, Needs And Intervention

Structure

2.1 Introduction

An intellectual disability (also commonly referred to as a developmental disability among other terms) is, simply stated, a disability that significantly affects one's ability to learn and use information. It is a disability that is present during childhood and continues throughout one's life. A person who has an intellectual disability is capable of participating effectively in all aspects of daily life, but sometimes requires more assistance than others in learning a task, adapting to changes in tasks and routines, and addressing the many barriers to participation that result from the complexity of our society.

2.2 Objectives

After going through this unit you will be able to:-

- Understand the concept of Intellectual Disability
- Describe the types and characteristics of Intellectual Disability
- Explain the scope of assessment
- Understand the meaning of assessment
- Explain the purposes of assessment
- Understand the types of assessment
- Describe the Strategies for Functional Academics and Social skills
- Understand the concept of Assistive Devices, Adaptations, Individualized Education plan, Person Centered Plan, Life Skill Education
- Explain the meaning of Vocational Training and Independent Living

2.3 Definition, Types and Characteristics

2.3.1 Definition

Internationally the definition of Mental Retardation 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. Definitions are listed chronologically to demonstrate the variations in describing condition of Mental Retardation.

a. Definition of Mental Retardation - American Association of Mental Retardation (AAMR) 1983:

As per American Association on Mental Deficiency, also previously known as American Association on Mental Retardation - Mental Retardation refers to a significantly sub - average general intellectual functioning resulting in or associated with concurrent deficits in adaptive functioning.

b. Definition of Mental Retardation - Persons with Disabilities Act 1995:

Mental Retardation means a condition of arrested or incomplete development of a person, which is specially characterized by sub-normality of intelligence manifesting before age of 18 years.

c. Definition of Mental Retardation - American Association of Mental Retardation (AAMR) -1992:

Refers to significantly sub-average intellectual functioning, existing concurrently with or more of the following applicable adaptive skill areas:

Communication

Self-care

Home Living

Social Skills

Community Use

Self-direction

Health and Safety

Functional Academics

Leisure

Work

In adopting this definition and accompanying classifications system, AAMR (1992) suggested that Mild, Moderate, Severe and Profound classification categories in previous definitions to be substituted with "levels" of support needed by an individual using term listed below:

Intermittent: Support of high or low intensity is provided as and when needed. Characterized as episodic or short-term during life - span transitions.

Limited: Supports are provided consistently over time, but may not be extensive at any one time. Supports may require fewer staff members and lower expense than more intense levels of support.

Extensive: Supports are characterized by regular involvement (daily) in at least some environment (work or home) and not limited (example: Long-term support & long-term home living support).

Pervasive: High intensity supports are provided constantly, across environment, mostly and may be of life sustaining and intrusive nature. Pervasive supports typically involve a variety of staff members.

This definition essentially restates the 1993 AAMD definition, except that it describes the developmental period age as 22 years, consistent with the USA federal definitions of developmental disabilities.

d. Definition of American Association of Mental Retardation (AAMR) - 2002

Definition reads, "Mental Retardation is a disability characterized by significant limitations, both in intellectual functioning and in adaptive behavior, as expressed in conceptual, social and practical adaptive skills, the disability originating before the age of 18 years.

The complete and accurate understanding of Mental Retardation implies that a particular state of functioning, which begins in childhood, having many dimensions and affected positively by individualized supports. As a model of functioning, it includes the context and environment within which the person functions and ecological approach that reflects the interaction of the individual with the environment. The outcomes of interaction are with regard to independence, relationships, societal contributions, participation in school and community and to personal well-being.

e. Definition of Intellectual Disability

Intellectual disability is a disability characterized by significant limitations in both **intellectual functioning** and in **adaptive behaviour**, which covers many everyday social and practical skills. This disability originates **before the age of 18**. (**American Association on Intellectual and Developmental Disabilities (AAIDD)- 2010**)

All the key terms are explained below:

1) 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.

2) Adaptive Behaviour

Adaptive behaviour 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, naïveté (i.e., wariness), 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 behaviour.

3) Age of Onset

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

4) Additional Considerations

But in defining and assessing intellectual disability, the AAIDD stresses that additional factors must be taken into account, 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 on the basis of such many-sided evaluations can professionals determine whether an individual has intellectual disability and tailor individualized support plans.

2.3.2 *Types*

A child may be classified as having an intellectual disability at one of the levels listed below.

Mild intellectual disability (MID).

(1) Intellectual functioning ranging between an upper limit of approximately 70 to a lower limit of approximately 55;

(2) Deficits in adaptive behaviour that significantly limit a child's effectiveness in meeting the standards of maturation, learning, personal independence or social responsibility, and especially school performance that is expected of the individual's age level and cultural group, as determined by clinical judgment.

Moderate intellectual disability (MOID).

(1) Intellectual functioning ranging from an upper limit of approximately 55 to a lower limit of approximately 40; and

(2) Deficits in adaptive behaviour that significantly limit a child's effectiveness in meeting the standards of maturation, learning, personal independence or social responsibility, and especially school performance that is expected of the individual's age-level and culturalgroup as determined by clinical judgment.

Severe intellectual disability (SID).

(1) Intellectual functioning ranging from an upper limit of approximately 40 to a lower limit of approximately 25; and

(2) Deficits in adaptive behaviour that significantly limit a child's effectiveness in meeting the standards of maturation, learning, personal independence or social responsibility and especially school performance that is expected of the individual's age-level and cultural group as determined by clinical judgment.

Profound intellectual disability (PID).

(1) Intellectual functioning below approximately 25; and

(2) Deficits in adaptive behaviour that significantly limit a child's effectiveness in meeting the standards of maturation, learning, personal independence or social responsibility and especially school performance that is expected of the child's age-level and cultural group, as determined by clinical judgment.

2.3.3 Characteristics of Target Group

The general characteristics of children with Intellectual Disability are:

1. Delayed development in developmental milestones.
2. Poor language development.
3. Short attention span and poor communication.
4. Poor motor integration and coordination.

5. Poor social skill.
6. Poor memory.
7. Poor in thinking, generalization, reasoning and imagination.
8. Poor or delayed concept formation.
9. Poor in scholastic or in academics.
10. May be associated with a typical physical feature i.e. small head/ large head, small eye etc.

The **signs** and **symptoms** of intellectual disability are all behavioural. Most people with intellectual disability do not look like they are afflicted with such, especially if the disability is caused by environmental factors such as **malnutrition** or **lead poisoning**. The so-called typical appearance ascribed to people with intellectual disability is only present in a minority of cases, all of which are syndromic.

Children with intellectual disability may learn to sit up, to crawl, or to walk later than other children, or they may learn to talk later.Both adults and children with intellectual disability may also exhibit some or all of the following characteristics:

- Delays in **oral language development**
- Deficits in **memory** skills
- Difficulty learning **social rules**
- Difficulty with **problem solving** skills
- Delays in the development of adaptive behaviors such as self-help or **self-care** skills
- Lack of **social inhibitors**

Children with intellectual disability learn more slowly than a typical child. Children may take longer to learn language, develop social skills, and take care of their personal needs, such as dressing or eating. Learning will take them longer, require more repetition, and skills may need to be adapted to their learning levels. Nevertheless, virtually every child is able to learn, develop and become a participating member of the community.

In early childhood, mild intellectual disability (IQ 50–69) may not be obvious, and may not be identified until children begin school.Even when poor academic performance is recognized, it may take expert assessment to distinguish mild intellectual disability from **learning disability** or emotional/behavioral disorders. People with mild intellectual disability are capable of learning reading and mathematics skills to approximately the

level of a typical child aged nine to twelve. They can learn **self-care** and practical skills, such as cooking or using the local **mass transit** system. As individuals with intellectual disability reach adulthood, many learn to live independently and maintain gainful employment.

Moderate intellectual disability (IQ 35–49) is nearly always apparent within the first years of life. **Speech delays** are particularly common signs of moderate ID. People with moderate intellectual disability need considerable supports in school, at home, and in the community in order to participate fully. While their academic potential is limited, they can learn simple health and safety skills and to participate in simple activities. As adults they may live with their parents, in a supportive **group home**, or even semi-independently with significant supportive services to help them, for example, manage their finances. As adults, they may work in a **sheltered workshop**.

People with severe or profound intellectual disability need more intensive support and supervision their entire lives.[5] They may learn some **activities of daily living**. Some require full-time care by an attendant.

2.4 Tools and Area of Assessment

2.4.1 Assessment

Assessment is an inevitable process in daily life for understanding, adjustment, and for taking decision for future action. Assessment is carried out in a family, in classroom, in the religious places, in the market, in the corporate office, in the execution of Government duties and responsibilities and all other everyday work of the society. It is a vital part of the scientific method of understanding and intervention.

Assessment starts from collection of information and continues in making decision for appropriate action to be taken for improvement of the individual. This process is very much useful in different essential services like - physical health, mental health, guidance and counselling, educational process, training, employment, and performance appraisal etc. In all these services collection of information for particular purpose, analysis of the information and making a decision for future course of action for improvement are essential features.

Definition

Assessment in general is a process of collection of information about an individual or a group and taking a decision for that particular individual or group for future course of

action. **Assessment refers to the process of gathering and analysing information in order to make instructional, administrative and/ or guidance decisions about or for an individuals (Wallace, Larsen, and Elksnin, 1992)**.

Definition of assessment focuses on three aspects :-

1. Collection of information
2. Analysis of information
3. Making decision for instructional, administrative and guidance.

2.4.2 Types of Assessment

Special Educational Assessment involves collection of information relevant to educational need of the children. This includes personal data, educational performance, the resources, the family involvement in training, and voluntary supports that could be gained for training mentally retarded student. For all these information, it is essential to collect information through different methods. These methods are :-

a) Formal

b) Informal

Formal

In this method, the information is collected by administering test/ behavioural scales / checklist, interview or administering questionnaire. The information is collected through very structured situation. It needs lots of preparation for the tester or observer.

Informal

In this method, the information is collected through natural interaction between the subject and observer. As because the information is being collected in a natural situation, there is a chance of getting appropriate response from the subject.

Different Tests are constructed for Assessment. Constructions of the tests are also vary as per the process of construction. There are two types of tests. These are Norm Referenced Test and Criterion Referenced Test. Norm referenced assessment and Criterion referenced assessment are named on the basis of the test used in the assessment process. The details of these two assessment process is given below :-

Norm Referenced Assessment

Norm Referenced Assessment is the more traditional approach to assessment. These tests and measurement procedures involve test materials that are standardized on

a sample population and are used to identify the test takers ability relative to others. It is also known as formal assessment.

Norm referenced assessment is defined as a procedure for collecting data using a device that has been standardized on a large sample population for a specific purpose. Every standardized assessment instrument will have certain directions that must be followed. These direction specify the procedure for administering the test and ways to analyse and interpret the results and reporting them. Examples of the more commonly known formal assessment devices are the Wechsler Intelligence Scales for children - Revised (WISC-R), the Illinois Test of Psycholinguistic Ability (ITPA). The Standford-Binet Intelligence Test and the Peabody Picture Vocabulary Test - Revised (PPVT-R) and Peabody Individual Achievement Test (PIAT).

Advantages of Norm-Referenced Assessment

Norm Referenced tests are widely used in special and remedial education for many reasons.

* First, the decision of categorizing the children as exceptional or special is mainly based on the test results of NRTs.
* Second, it is easy to communicate test results to parents and others unfamiliar with tests.
* Third, norm-referenced tests have received the most attention in terms of technical data and research. They are specifically useful in problem identification and screening.

Disadvantages of Norm-Referenced Assessment

The use of norm referenced tests data for the purpose of educational programming is questioned in many instances for the following reasons.

* Information obtained from norm-referenced testing is too general to be useful in everyday classroom teaching. Many educators disregard the prognosis and interpretative types of data provided by standardized tests because the information is often not directly applicable to developing daily teaching activities or interventions. What does knowing a student's WISC-R score or grade equivalent in reading specifically tell a teacher about what and how to teach ? For instance, what is important is to know whether the student needs to learn initial consonants or is he having difficulty with comprehension.
* NRTs tend to promote and reinforce the belief that the focus of the problem is within the student. It is because the primary purpose of NRTs is to compare one

student with another. However, although a student may differ from the norm, the real problem may not be within the student but in the teaching, placement or curriculum. Educators must begin to assess teacher behaviours, curriculum content, sequencing and other variables not measured by norm referenced tests.

Criterion Referenced Assessment

Criterion Referenced Assessment is concerned with whether a student is able to perform a skill as per the criteria set, or not. In contrast to norm-referenced assessment, which compares one persons performance to others, criterion referenced assessment compares the performance of an individual to the pre-established criteria. In criterion-referenced test, the skills within a subject are hierarchically arranged so that those that must be learned first are tested first. In math, for example addition skills would be evaluated (and taught) before multiplication skills. These tests are usually criterion referenced because a student must achieve competence at one level before being taught at a higher level.

Advantages of Criterion Referenced Assessment

The criterion referenced test results are useful :-

* to identify specific skills that need intervention
* to determine the next most logical skill to teach as the implications for teaching are more direct with criterion referenced tests.
* to conduct formative evaluation, that is, the performance of the student is recorded regularly or daily when the skills are being taught.

This makes it possible to note the student progress, to determine if intervention is effective and to help decide the next skill to be taught if achieved, if achieved, if not to decide what other strategies or methods and materials are to be used for teaching.

Disadvantages of Criterion Referenced Assessment

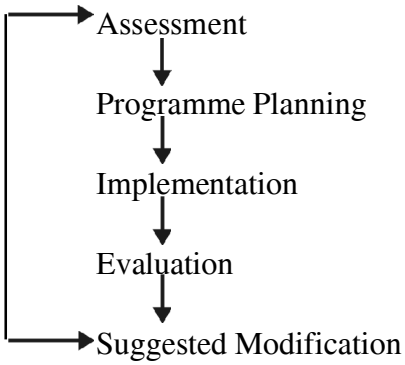
* Establishing the passing criteria for a specific skill is a problem in criterion referenced testing.

  For example, if a test were needed to determine whether student had mastered high school mathematics, there is a problem of determining exactly which skills should be included in the test. Further, should a student pass the test if 90% of the questions are answered correctly or only if 100% are correct ? These decisions must be carefully considered, because setting inappropriate criteria may cause a student to struggle unnecessarily with a concept.

* It is difficult to decide exactly which skills should be included in the test.
* There is also a problem that the skills assessed may become the goals of instruction rather than selecting the skills that the student should know. Due to this, the teachers may narrow down their instruction and teach in accordance with what is measured on the test rather than what is truly required for the student to know.

Continuous Assessment

Assessment is an ongoing process. In the process of Special Education to the children with Intellectual Disability, their abilities are assessed periodically to plan the future training programme. A flow diagram of which is given below :-



In the above diagram, evaluation is carried out after implementation of the programme to see the level of achievement compared to set criteria. Evaluation is restricted to the programme planned for the child. Assessment covers the other non-planned area for training. Assessment after each year or after a particular period of training is inevitable for decision making about the child. For example, a student of Primary class in a Special School for the Intellectually Disable children is assessed at the joining time for programme planning. After one year and completion of 4 years in that class assessment is carried out for further decision making both for administrative purpose and training purpose. Assessment is a continuous on-going process which is a vital part of Special Education.

2.4.3 Tools and Areas of Assessment

In special education assessment, the same tool can be used for diagnostic, prescriptive and evaluation purposes. Purposes for assessment include monitoring student

understanding during a lesson, checking student progress during a specific programme implementation and evaluating student achievement at the end of training programme. In the first two instances, the assessments are called **Formative Evaluation**; in the latter instance, it is **Summative Evaluation**. It is used to measure how well students have learned key content and skills as defined by the learning segment's goals and objectives. The selection of assessment tools and methods vary depending on the purpose for which the assessment is to be carried out and the type of the data that has to be gathered. Following are the various tools available for special educational assessments developed for the Indian context.

1. Madras Developmental Programming System (MDPS)

The first Indian comprehensive Behavioural Scale developed in 1975 at Chennai, the then name Madras to use for assessment of behaviour potential and programme planning of mentally retarded children. This scale could be used for any age, sex and level of retardation in our country. This is a Criterion Referenced Assessment Scale, which provides an inbuilt system for periodic assessments and evaluation, which helps for planning, execution and monitoring of special education, and related services for children with mental retardation.

Description

This scale could be used for individualized Educational Programming and in classroom teaching. There are 18 domains in the scale and each domain comprises of 20 items. The items in the domains are sequentially arranged in most of the domains. The domains are listed below :-

1. Gross Motor Activities
2. Fine Motor Activities
3. Meal Time Activities
4. Dressing
5. Grooming
6. Toileting
7. Receptive Language
8. Expressive Language
9. Social Interaction
10. Reading

11. Writing
12. Numbers
13. Time
14. Money
15. Domestic Activities
16. Community Orientation
17. Recreation, Leisure Time Activities
18. Vocational

Administration

The administration of this scale is very simple. The user should have an assessment kit ready on different items of the domains and collects information by a) direct observation, b) report from the parents, caretakers and others informal. The item already the student achieves is marked by A and fails is marked by B. at the end of the administration all the A's and B's are counted in each domain and entered at the right side column of the domain. The A's are coloured with blue and the B's are coloured with red. The blue area indicates the student's performance and red area indicates the needs to be given training.

Use

The scale is widely used for both IEP and assessment and management in the classroom due to its unique features like :-

1. Contains wide area of behavioural domain.
2. Details of items in each area.
3. The items of many areas are sequentially arranged.
4. Easy administration.
5. Helps in curriculum development.
6. Helps in Educational Grouping of the children and summative evaluation.
7. Helps in formative evaluation of the curriculum transaction.
8. Helps in monitoring the special educational services.
9. Could be used throughout the schooling of the student.

2. NIMH - Vocational Assessment and Programming System for Persons with Mental Retardation (NIMH-VAPS)

This scale was developed at NIMH under the supervision of Ms. A.T. ThressiaKutty in 1998. The scale is developed to assess the general ability, vocational potential and work behaviour of the mentally retarded adults. This aims at assessing the vocational potentiality of an adult with MR and helps in planning and execution of vocational training. It provides information on work readiness skills, helps to identify suitable jobs in the community.

It is useful for formative and summative evaluation of the vocational training also. It could be used in training set up in the institution, sheltered workshop or workshop or open employment system while job training.

Description

The scale is mainly divided into 4 parts :-

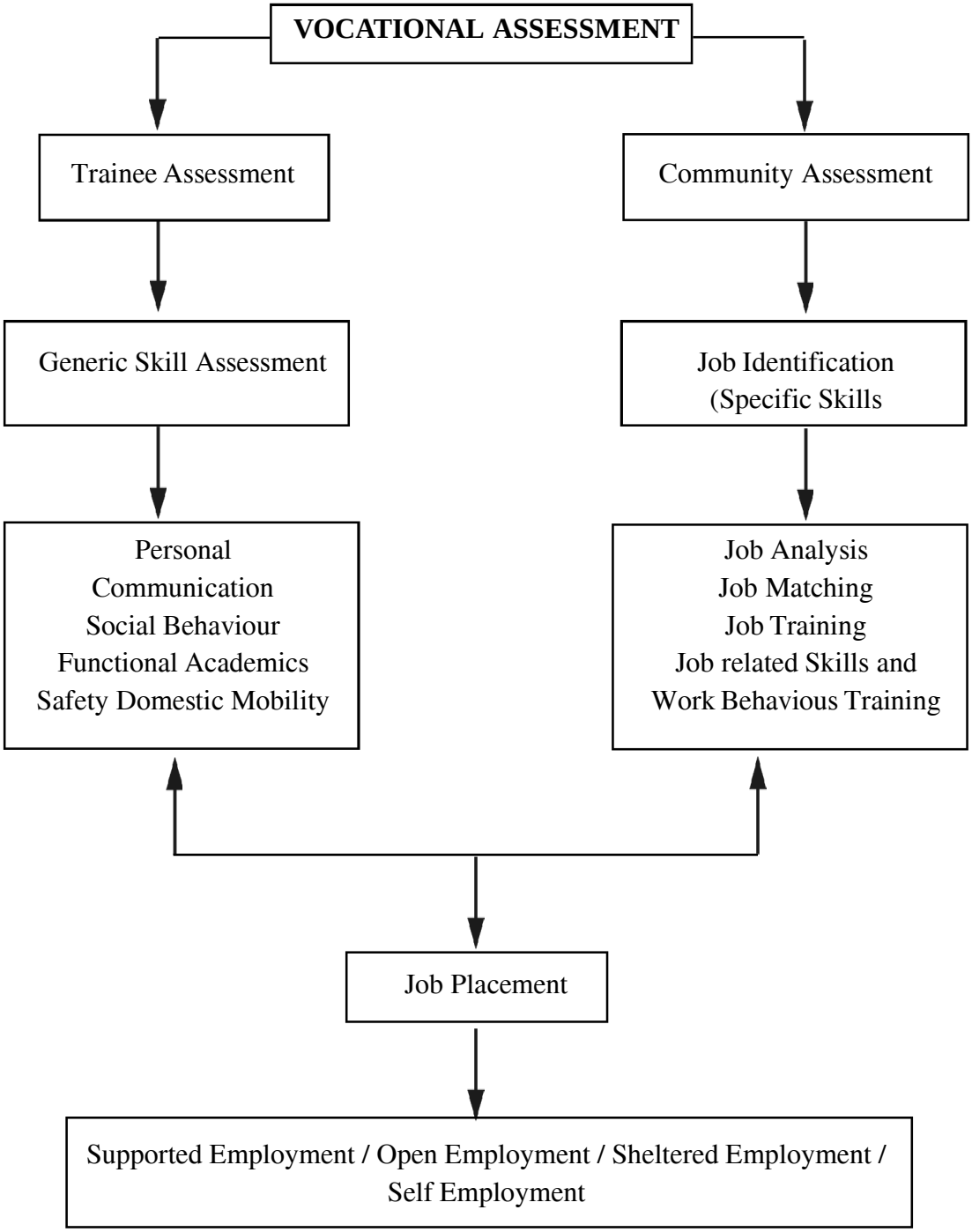
1. Vocational Profile.
2. Generic Skill Assessment Cheklist.
3. Job Analysis Format.
4. Work Behaviour Assessment Checklist.

Generic Skills Assessment Checklist

Personal	04
Communication	05
Social Behaviour	10
Functional Academics	30
Safety Skills	07
Domestic Behaviour	13
Mobility and Hand Functioning	05
Occupational Skills	06
TOTAL	**80**

Job Analysis Format

- Main Work Area
- Additional Duties
- Work Related Skills


VOCATIONAL ASSESSMENT
Trainee Assessment
Community Assessment
Generic Skill Assessment
Job Identification
(Specific Skills
Personal
Communication
Social Behaviour
Functional Academics
Safety Domestic Mobility
Job Analysis
Job Matching
Job Training
Job related Skills and
Work Behavious Training
Job Placement
Supported Employment / Open Employment / Sheltered Employment /
Self Employment

- Personal
- FA
- Sex
- Education
- Recreation
- Independent Living Skills

Work Behaviour

- Job Requirement
- Job Training Procedures
- Trainers Responsibilities
- Parents Cooperation

Work Behaviour - Assessment Checklist

- Physical Appearance
- Personal Interaction
- Regularity & Punctuality
- Communication/ Social Manners
- Quality & Quantity Aspects of Work

Scoring System

Performance of each item by the trainee must be observed and codes must be given against each item as per the instruction given below :-

Description	Code
Always	3
Attention	2
Rare	1
Never	0

Use

- Provides information on jobs selected
- Identifies areas in which training is needed

- Emphasizes on the job training.
- Evaluates work related skills and work behaviour.
- Targets employment for all trainees who are assessed.
- Extends support for job retention.

3. Behavioural Assessment Scale for Indian Children with Mental Retardation (BASIC-MR)

This behavioural scale was developed at NIMH under the guidance of Peshwaria R. and Venkatesan A. in the year 1992. This is developed to assess and evaluate the performance of the children with mental retardation of various level and age group. This has two parts.

1. BASIC-MR Part-A
2. BASIC-MR Part-B

BASIC-MR Part-A is used for understanding the strength and needs of the children with mental retardation to develop the educational programming. Part-B is used to assess the problem behaviours of the children with mental retardation to intervene to reduce the problem behaviour which are the main hindrances for their learning. Both the parts are useful for assessment of adaptive behaviour and maladaptive behaviour of children with mental retardation for classroom management.

Description

BASIC-MR Part-A has seven areas and each area has forty items. The details of the test is given in the table:-

Sl No.	Domain	No. of Items
1.	Motor (Gross Motor & Fine Motor)	40
2.	Activities of Daily Living (ADL)	40
3.	Language (Receptive & Expressive)	40
4.	Reading - Writing	40
5.	Number - Time	40
6.	Domestic - Social	40
7.	Pre-Vocational - Money	40

BASIC-MR Part-B has ten areas. Different areas have different varying number of items. The details of the test is given in the table :-

Sl No.	Domain	No. of Items
1.	Violent & Destructive Behaviours	16
2.	Temper Tantrums	04
3.	Misbehaviours with Others	07
4.	Self Injurious Behaviour	10
5.	Repetitive Behaviour	08
6.	Odd Behaviours	08
7.	Hyperactivity	03
8.	Rebellious Behaviours	06
9.	Anti-Social Behaviours	09
10.	Fears & others	04

Administration

BASIC-MR Part-A : The information is collected through observation, interview the parents and report from the teachers and caretakers. The degree of performance in each item could be noted by different points. The description of the points is described below :-

Scoring

Description	Code
Independent	5
Clueing	4
Verbal Prompting	3
Physical Prompting	2
Total Dependent	1
Not Applicable	0

Use

It is used for the following purpose :-

1. Assessment to understand the strength and needs of children with mental retardation.
2. Programme planning for IEP & Group Teaching
3. Evaluation of performance
4. Monitoring of the programme
5. Report writing

4. <u>Functional Assessment Checklist for Programming (FACP-NIMH)</u>

Functional Assessment Checklist for Programming - FACP-NIMH was developed at NIMH in the Department of Special Educational under the supervision of Dr.Jayanthi Narayan. It was developed keeping in view that, it would lead to appropriate programming. It also provided inbuilt periodic evaluation facility for monitoring progress and modifying the programmes. It also provides quantitative and qualitative measurement of the student's progress. The FACP has 7 parts. These are: -

1. Pre-Primary
2. Primary-I
3. Primary-II
4. Secondary
5. Pre-Vocational-I
6. Pre-Vocational-II
7. Care Group

Grouping is done for the purpose of maintaining uniformity in special education, time bound programming and for easy transaction of curriculum in special school for the children with mental retardation. The different checklists are developed for different classes. The particular checklist contains minimum required skill for that class and scope of inserting items those are required for each domains of the checklist. The items to be inserted is being decided by the special educator involved assessment. This is being done as per the need of the student according to his socio-cultural background. After completion of stipulated training in particular class decision will be taken for promotion.

Promotion procedure could be easily administered through evaluation. After achieving more than 80% task prescribed in a particular group the student could be promoted to the higher class.

Each checklist has 5 domains. These are: -

1. Personal
2. Social
3. Academic
4. Occupational
5. Recreational

Administering Checklist

The student's performance on each item must be noted. The information regarding the student's performance could be collected by observation through activities, report from the parents, the caretakers and from the last records. Performance could be recorded as code given below :-

Encoding the students performance for the domains - Personal Social Academic & Occupational

Performance	Code	Description
Yes	+	The student can perform the item with no help.
Occasional causes	C	The student reads to be given classes which requires thinking by the student to perform the task.
Verbal Prompting	VP	Telling each subtasks verbally to the trainee like - rinse hands, 'pick up soap' apply so on.
Physical Prompting	PP	Physically helping the student to complete the task.
No	-	Student is totally dependent on the task hence one has to completely perform the task for the student.
No Exposure	NE	Lack of opportunity to learn.

Scoring Recreational Activities

Code	Description
A	Takes initiative and participate effectively.
B	Participates when other initiates.
C	Involves self but not aware of rules.
D	Observes with interest.
E	Not interest (Indifferent)
NE	No Exposure

Usefulness of FACP

1. The items are easy to understand.
2. Necessary activities are enlisted.
3. Necessary items are to be observed for a particular class.
4. Scope of including items necessary in a particular domain for students from specific cultural background.
5. Proper weightage could be given to their performance.
6. It has scope for monitoring and evaluation.
7. It could be used for curriculum transaction and reference for promotion.

5. Upanayan - A programme of Developmental Training for Children with Mental Retardation

This is an assessment tool for young children. This programme covers children in the age group of 0-6 years. The programme consists of a checklist, a user manual, a set of activity cards and material for assessment and training.

Description

The checklist covers five areas of development viz., motor, self-help language, cognitive and socialization. Each domain has 50 items totalingupto 250. The items are arranged in a sequence based on normal development.

Administration

The activity cards are colour coded to separate each domain from the others. The manual contains a list of materials to be used during assessment. The record formats are provided to note the background information and the assessment data periodically. If a student performs an activity it is marked "A" and the student does not perform the task it is marked "B".

The programme is computerized so that the parent can be given the respective activity cards needed for training their student. The programme is intended for home training in home based and center based intervention.

6. Portage Guide to Early Education

This is developed by S.M. Bluma, M. Shearer, A.H. Frohman and Jean M. Hilliard (USA). It is basically a system for teaching skills to pre-school children with developmental delays. The portage project is a home based training system, which directly involves parents in the education of their children in the early childhood i.e., 0-6 years of age. The training is provided by a specially trained teacher or a public health worker with a special training and experience in the field of student development. However, the key person in the home-based programme is parents/ family members.

It can be used by Para-professionals like the staff of Anganwadis, Balwadis, non-professionals like parents, siblings, and professionals such as pre-school educators, psychologists, and doctors.

Description

The portage checklist covers areas such as infant stimulation, self-help, motor, cognitive, language and socialization. In each area, the activities are listed in a sequential order corresponding to the age. In addition to the checklist, there are activity cards for each skill, which explains the materials and procedure to be used to train the student. The checklist also provides age norms for each task on the margin, which help the trainer estimate the age equivalence of the student's functioning.

Administration

The first step is to check through the listed skills in all the areas and record the performance of the student against each skill under the column entry behaviour. There is also the provision to mark date of achievement and remarks. A separate provision is made (Activity chart) to record activities, achievement and targets. As the format accommodates daily and weekly recording of progress, there is close monitoring.

2.5 Strategies for Functional Academics and Social Skills

2.5.1 Functional academics

Functional academics is merely academics made functional designed to teach skills which allow each student to succeed in real-life situations at home, school, work and in the community. The functional academics curriculum includes a range of areas namely:

- Pre-requisite concepts
- Maths
- Reading
- Writing
- Communication
- Community orientation
- Skill oriented activities etc…..

Given these areas the teachers tailor the academic programs to the age, gender, needs and functioning of the student. Each of the subcomponent is divided into skill level and taskanalyzed to sequential steps which ranges from early childhood to transitional skills. Such skills are not taught in isolation but as part of multi-sensorial approach. Key outcome of functional skills is for the students to exercise maximum sense of control, engage in self-directed behaviour and autonomy over his/her environment.

Functional Reading

Functional Reading is defined as a student's actions or responses resulting from reading printed words (Brown and Parlmutter, 1971). Functional term is related to application of learnt skills in real community settings. Hence words selected for reading must be "functional" allowing the reader to become independent in community living. As stated by Polloway and Patton (1993), reading is the key to personal and social adjustment and for successful involvement in community activities. Kirk and Monroe (1948) outline three goals that help develop frame for teaching readers with disability:

Primary goal for all students who are mildly or moderately disabled for learning

academics, is to develop **"ability to read for protection and survival"**. This includes examples like – Directions in community, Sign Boards in community, **Labels**on consumer products for daily use and significant symbols that direct for safety and survival such as symbol for toilets, danger symbol, signage for restaurant etc.

Second goal is for reading to gain "information and instruction" which

implies an individual to deal with application for jobs, reading news-papers to be updated on current happenings for general knowledge, reading advertisements, facilitate usage of telephone and address book for accessing social contacts.

Third goal is to read for "pleasure". For most of students with Mental

Retardation this is an essential pre-requisite and a realistic goal which helps them engage in making simple accessible choices in daily life at home and outside home in community.

Teaching Functional Reading:

Teaching functional reading has several approaches as stated by Auckerman (1971), however he endorses an eclectic method is necessary for meeting individualized needs of students with Mental Retardation. However approaches are separately explained for purpose of clarity in selecting approaches rationally to suit each child with disability meaningfully and disability level wise.

(i) Sight Word Vocabulary (Whole Word Approach):

By helping student recognize the "whole word" at one time and later introducing the awareness to decode each letter to spell appropriately helps child first pay attention to group of familiar alphabets in a cluster. Later while decoding the student can become familiar with sequence of placement of letters and the rational for spelling the word by associating sound with specific letter and arrangement of letters and corresponding sounds that represent placement of letters in given word spelling.

We use this technique for the student to identify his or her own name and then the alphabets in it. Start with the student's name to read and write. The letters in the name have to be associated with the pics first, then letter-letter matching and then writing the whole name. Matching left -right then diagonal and then placing the letters in the required sequence for the name. Similarly for surname, home address. Once these are achieved father's name, mother's name, sister's name, brother's name. Start with words the students can associate and is relevant for them through this method.

(ii) Errorless Discrimination (Walsh & Lamberts, 1979):

Here teacher can present the whole word in isolation and read aloud by pointing to the word beginning with 3 to 4 letter words then slowly progressing using same method to read complex words increasing in letters from 5 to 6 and onwards according to the child's pace and ability to progress in reading, in 4 to 6 trials.

Functional Writing

One of the important mode of communication is written expression. This demands eye - hand coordination, motor co-ordination, sense of direction and recognition of symbols (pictures/letters/ numbers/words/punctuation etc). Some writing tasks require **"left to right"** orientation in horizontal direction (for writing words), whereas some tasks require vertical orientation (for writing numbers in arithmetic problems as in addition or subtraction).

Writing involves Four Stages:

i. Tracing
ii. Joining Dots
iii. Copying
iv. Writing by Memory (including spellings of words and sequence of words in a sentence).

Functional Arithmetic

Numbers play an important role in our lives. Our communication involves reference to negotiating quantities. Schwartz and Budd (1983), define Functional Mathematics as "use of mathematics needed for vocational, consumer, social, recreational and home making activities".

Functional mathematics includes:

Functional Arithmetic: At the preschool level of education and primary, the students need to count parts of the body, things in the classroom, blades of the fan, legs of an animal, table, fingers of one hand, etc.

Pre-Computational Skills:

Development of maths skills follows a sequence:

Relative position of one in quantities - such as being aware of terms to describe quantities "more"/ "less"/ "few"/ "none" even before introducing number values.

Teach the student to identify "1" object only. Then introduce the symbol "1" only after student successfully identifies real object in "1" quantity. Then place the object under the flash card with written symbol "1". Finally ask the student to read the numeral "1" by showing the flash card.

Teach the student further numbers only after learning concept of "1" successfully. Place "one more" after "1" and then by counting say "1" and "2" in orderly

manner. Also encourage to identify which of the body parts are in "2" numbers on one's own body. Same procedure will follow for teaching higher numbers in sequential order. Counting items in daily use must follow "left to right" orientation.

Writing Numerals: This includes - Tracing, Copying and Writing from Memory.

Cardinal and Ordinal Numbers: Numbers indicating **"quantity"** is called a "cardinal numbers" (Ex: **How many** boys have visited house.) and those values that identify **"position"** are called as "ordinal numbers" (Ex- in case you are searching a house address, often directions read left turn and third house on the left side, this denotes position of the house

(ii) Computational Skills:

It includes basic skills in addition, subtraction, multiplication, division etc.

(iii) Application Skills

Daily experience in our life requires application of maths skills, some include money, time, capacity, weight and mass, length and distance. All these areas involve some form of measurement, which is based on relative comparisons.

Money - It helps us compare worth of objects. Instruction about money should follow sequence throughout, in relation to practical experiences. Therefore it should be planned in such a way that each student's needs in terms of utility are met.They can be asked to make the totals of list of grocery items on calculator.

Students can be sent to purchase a few items from the shop. They can make a total of clothes for laundry or given for ironing.

Time - While defining time we are comparing a period between two events with predetermined duration. First thing while teaching time is to build concept of events happening in sequence. An important pre-requisite for telling time is an identification of clock and calendar. To relate parts of the day and night and understand its relevance with reading time in clock.Understanding progress of time in days, weeks and months year wise and relate use of calendar. It is important that student honours daily routine for respecting time limits for getting ready to school, mealtime, TV watching, or visiting friends or places and differentiate between school and holiday schedule. Student must also comprehend frequency of events that occur weekly, monthly and yearly, such as festivals and birthdays occur once a month but Sunday comes once in a week and school going is a daily routine.

Weight / Mass / Length / Distance:

We use measurement in day-to-day activities to describe "how much", "how long", "how far" concepts very frequently for making important decisions. Comparative statements like more vs. less, big vs. small, heavy vs. light are used meaningfully in daily practical real situations. These relative measurements are very essential for daily living, therefore adaptive options for measurement are necessary to use in teaching students with Mental Retardation for regular use.

a. Capacity / Volume:

Introduce that liquids like water, oil, milk and petrol are measured in unit of Litres (Ltr) and Millilitre (ml), which refers to "capacity / volume".

b. Weight and Mass:

Drawing from example of measuring liquids, introduce concept of weight of objects or person how they may be heavy or light and therefore unit of measurement for that is "Kilogram", "grams".

c. Length and Distance:

Length of bench, plot and height of a person is measured in feet and cloth is measured in metres or centimetres. Distance between places or locations like distance between two cities is measured by Kilometres or metres. These are all measurement concepts used in daily life. These concepts can be taught with simple exercises for students.

2.5.2 Social Skills

Appropriate social behaviours are necessary for any person to be an acceptable member of the society. Every human being is expected to follow certain standards of social behaviour, set by the society according to the cultural norms and age level of the individuals.

In case of persons with mental retardation, intensive training is needed to cultivate appropriate social behaviours. Instead of keeping them away from the society, giving them chances to mix in the society from the childhood itself will lead them towards gaining social competency. The training should be started very early in life. The family, the relatives, neighbours, friends, and the society at large are responsible for the social skills training of the persons with mental retardation.

❖ The following social skills are need to be taught:

1 Waits for needs to be fulfilled

2 Plays with peers sharing objects

3 Greets others

4 Obeys Commands

5 Says 'Please', 'Thank you', 'Sorry' appropriately

6 Helps parents in household tasks

7 Asks permission

8 Takes turn

9 Participates appropriately at meal time

10 Dresses and grooms appropriate to the situation

11 Visits relatives and friends

12 Participates in social functions

13 Behaves appropriately with the opposite sex

14 Returns borrowed materials

15 Identifies human service persons and community helpers

HOW TO TRAIN?

- ❖ Give chances to learn the skills through regular selected activities.
- ❖ Gradually reduce the number of repeated instructions and observe his performance in natural environments.
- ❖ Include him as a family member, in all family get together.
- ❖ Give him chances to participate in social and religious functions. Outings help in enhancing social skill training.
- ❖ Accept the intellectually disabled child as a member of the family and the community.

Intensive training is needed to cultivate appropriate social behaviours in the persons with Mental Retardation. The training should started early in life. The family, the relatives, neighbours, friends and the society at large are responsible for the social skills training of the persons with mental retardation.

The persons with mental retardation need stimulation, repeated chances, supervision and training to develop proper skills.

2.6 Assistive Devices, Adaptations, Individualized Education Plan, Person Centered Plan, Life Skill Education

2.6.1 Assistive Devices

Assistive technology is the term used to describe devices used by people with intellectual disabilities and/or other disabilities that help compensate for functional limitations and increase learning, independence, mobility, communication, environmental control and choice. This term also refers to direct services that assist individuals in selecting, acquiring or using such devices.

How do people with intellectual disabilities use assistive technology?

Communication: Low to high tech communication devices can be the means for communication for a person who cannot communicate with his or her voice, due to physical and/or cognitive reasons.

Environmental Controls: Devices to control the environment are important to people with severe or multiple physical disabilities and/or cognitive disabilities, who have limited ability to move about in their environment or control electrical appliances. Technology allows a person to control electrical appliances, audio/video equipment such as home entertainment systems or to do something as basic as lock and unlock doors.

Mobility: Simple manual to sophisticated computer-controlled wheelchairs and mobility aids such as walkers and canes are available for a person who cannot walk.

Education: The computer can be a tool for improved literacy, language development, mathematical, organizational, and social skill development. Alternative ways to access computers are available for people who cannot operate a keyboard. A variety of software is available to help computer-users who have visual impairments and facilitate improved spelling and literacy skills for individual users with print disabilities.

Activities of Daily Living:

Examples are:

- Devices to assist a person with memory difficulties to complete a task or to follow a certain sequence of steps from start to finish, such as making a bed or taking medication
- Directional guidance systems with auditory cues to help a person travel from one place to another

- Devices to help a person shop, write a check, pay the bills, or use the ATM machine

Employment: In response to the Americans with Disabilities Act, employers are making the workplace more cognitively accessible. This may require worksite modifications by the employer, to permit the employee to perform a job. For example, an audiotape might be used to prompt a worker to complete each task in a job.

Sports and Recreation: Adaptations can be made to computer games which allow the game activity to be slowed down for a user who cannot react as quickly to game moves and decision-making. Specially adapted sports equipment is available to compensate for functional limitations, such as specially designed ball ramps that are used in bowling.

How can assistive technology benefit people with intellectual disabilities?

Assistive technology can help people with intellectual disabilities overcome barriers towards independence and inclusion. Technology can compensate for a person's functional limitations. People with intellectual disabilities should be introduced to assistive technology as early as possible. The AT device should be available for use throughout the day and in natural settings, including home, school, work and recreation. There should be consistency in the kind of technology available, how it is used, and methods for instructing the user on operating the device. Transitions from one device to another should be made as smooth as possible by building on and integrating previously learned skills. Technology solutions should be flexible and customized to accommodate the unique abilities of each person with intellectual disabilities. There is a growing use of assistive technology with infants and young children, particularly with communication devices introduced to facilitate early language development.

2.6.2 Adaptations

Adaptations retain the learning outcomes of a prescribed curriculum, and are provided so the student can challenge the regular learning outcomes. A child on an adapted program may be well below the standard of the class, but still may be able to minimally meet the grade level expectations. Class or grade level comparisons in establishing if a student meets expectations should be avoided. These adaptations can include alternate formats, instructional strategies and assessment procedures. Adaptations include, but are not limited to:

- extended time for assignments or tests,
- a learning assistance support block is scheduled to develop and practice study skills,

- audio tapes or a peer helper to assist with assigned readings,
- a computer to facilitate the completion of written assignments,
- alternatives to written assignments to demonstrate understanding,
- separate settings for tests and exams, and
- supervised breaks for tests and exams.

Adaptations/Accommodations:

For Mild to Moderate Intellectual Disability:

- Do not use complex sentences with a person who is mentally slow.
- Concentrate on concrete ideas and skills. An individual with Intellectual Disability often has trouble with abstract concepts.
- Make instructions clear and concise. Break directions down into small steps or tasks.
- Demonstrate whenever possible. Showing is often more effective than telling.
- Be patient, persistent, and consistent.
- Provide warmth and acceptance. Promote a sense of security through a smile, words of praise, or physical expressions of affection.
- Show respect. Do not be condescending. Talk to the individual as a person; talk to an adult as an adult, not as a child.
- Don't have low expectations for a person with Intellectual Disability. Given training and support, a person with retardation can be gainfully employed and totally integrated into society as a valuable, contributing member.

For Severe to Profound Intellectual Disability:

- Use the accommodations listed above.
- Do not react with pity, anxiety, or a variety of other negative emotions when first meeting a person with a severe handicap.
- Use age-appropriate conversation.
- Use age-appropriate activities.
- Include these individuals in community and family activities. Even an individual with profound retardation profits from events that provide integration/interaction with persons who are not handicapped. In fact, this is the way he/she learns

best. Being exposed to every phase of community life allows him/her to learn the behaviours necessary for achieving maximum participation in society.

Parents must be made fully aware of adaptations to their child's program on an ongoing basis and formal reports or IEP's should note the adaptations being made.

2.6.3 Individualized Education Plan (IEP)

To make teaching and learning effective for Person with Intellectual Disability, an individual educational program is prepared to meet the individual need of the child as every child is unique and needs are specific. Hence, a comprehensive evaluation is carried out to facilitate the process of program planning. The evaluation involves health history, education history, family history etc. mental ability, sensory ability, adaptive behaviour, maladaptive behaviour, academics status and many other elements.

Intellectual impairment in mental retardation is characterized by poor or less ability to understand and learn. The individual differences between people with mental retardation are varied to such an extent that every child needs can only be met through a well planned IEP.

Special educator, principal, teachers, parents and other professionals as per requirements of the multidisciplinary team (Occupational Therapist, Physiotherapist, Social worker, nurses, psychologist etc.) who are concerned with the needs of the students need to participate in the meetings to develop and evaluate the IEP.

The well formatted written IEP document serves as a management tool for intervention.

Depending upon the child needs the IEP should have program in PT, OT, ST along with the special education programme. In totality the IEP helps in implementing, monitoring and evaluating the program.

Components of IEP

Globally IEP contains a specific format with all the components, intact to write IEP. This is written in two parts.

Part-1

1. Demographic data

It includes, child's name, age, sex, education, mother tongue, address, parents name, occupation, income, date of filling the IEP, registration number, class and roll no. etc. on specific heads on which information is required.

2. **Significant information about the "person with mental retardation"**

   Any significant and specific information in relation to the child may be documented. E.g. Sensory preference, learning time preference, attention span, rate of learning etc.

3. **Goals:** Goals selected on annual basis which the teachers expect the students to achieve over a period of one year as per curricular content is documented.

4. **Associated condition**: Many person with mental retardation have an additional disability or more are technically referred to as multiple impairment/ disability. For e.g. Mental Retardation, Visual Impairment, Mental Retardation and Hearing Impairment, Mental Retardation and Cerebral Palsy, Mental Retardation and Epilepsy, Mental Retardation and Autism etc. Curricular strategies and planning may differ in cases with additional impairments.

5. **Staff responsible**: The person responsible for implementation of the IEP is documented for administrative and clinical reasons.

PART-B

1. **Skill**: Specific statements of what skill / task / activity to be taught is documented in the specific terms. E.g. writing names of month of year.

2. **Baseline or current level**: The current level or baseline performance level of the student in reference to the task/ skill/activity for teaching is documented. E.g. can write names, 3-4 letter words.

3. **Specific objectives or Behavioral objectives**: This is the statement that specific what the student will learn(content) what the student will do with the content(behavior), performance level of the student in the content(criteria) and how much is the time period required for achieving the target(duration).

4. **Material and learning aids**: Learning aids make learning meaningful and easier. Every child has unique needs hence; learning aids effective for one child may not be effective for other child. Depending upon what is to be taught and child specific interest, level and needs learning aids may differ for same activity.

5. **Procedure:** How to motivate the child to learn the activity and how the task will be taught is described stepwise under procedure. This all includes different strategy to be used to make the learning effective.

6. **Evaluation:** The student's performance in the particular task chosen against the set criteria as per the specific objective is noted.

Some more information on the IEP content

Background information: This information is noted briefly focusing on educational relevant details which help in IEP planning. Child family background (siblings, socio economic status, educational status, status of family members); birth and developmental history, school history, occupational history are required for appropriate IEP planning and family intervention. For e.g. for a rural child with illiterate parents more sketches, less written matter and material as per rural availability will be required. Child having history of epilepsy without medical intervention may have to be referred to medical intervention.

Assessment of current level of functioning: Without being subjective and adding any interpretation the teacher notes down the exactly what the child does while performing a specific activity. The teacher at this stage doesn't says no or doesn't point out the mistakes. Assessing the current level required skill and efficiency and to be done with accuracy. A wrong assessment will lead to a long goal i.e. to high or too low goal. A total assessment of a child may take a week or more and a natural environment is preferred for assessment. Certain specific information like toileting, bathing skills etc. may be availed from the parents. The teacher must make a good interpretation of the parent remarks. The assessment will include various skills in motor, self help, socialization, language, domestic activity, recreational activities, academics activities, time and money concept. For a slow learner and high functioning MR assessment may have to be conducted for grade level functioning using the regular school books. Here silent reading, oral reading, reading comprehension, spelling, writing ability, dictation, writing on own, arithmetic ability, arithmetic comprehension etc. may have to be tested. Assessment of the detailed pre vocational skills need to be conducted. Various assessment tools used for assessment in our country are:-

1. Madras Developmental Programming System (MDPS).
2. Functional Assessment Checklist for Programming (FACP).
3. Behavioural Assessment Scale for Indian Children having Mental Retardation (BASIC – MR)
4. PORTAGE
5. UPNAYAN
6. NIMH-Vocational Assessment Programming System(VAPS)

Goal

By considering the child past achievement, rate of achievement, current level, practical use of the activity, priority need of the child, time required of the training, parental involvement level and teachers skills; goals are selected. The activities of the daily living goals are the priority areas. Priority goals may differ for home based training and school based programmes.

Short term objectives

It means breaking down of annual goals into smaller units. Specific strategy can be worked out for the achievement of the objectives. The objectives would contain the condition in which the child would perform, who would perform, what behaviour would be performed, what would be the criteria of the performance and duration for the achievement of the objectives. The objectives are stated in behavioural terms specifying observable behaviour and criteria for mastering. It clearly tells what is expected from students and what is to be done.

2.6.4 Person Centred Plan

Person centred planning has been used for over 20 years and, in that time,

there has been much learning.

It cannot be explained with a simple one-sentence definition. In fact, the use of the word 'planning' leads to significant misunderstandings and a focus on doing a 'plan', rather than the more important essential components of listening and thinking with the person, learning what it is the person and their family want, and responding to providing the supports needed to achieve the goals and aspirations of the person and their family and friends. The process is embedded in the person's social and cultural context and therefore reflective of, and responsive to, their personal, social and cultural circumstances. Probably the best way to ensure that its complexity is understood is to quote from some of the people who have written about, practised and taught person centred planning over the years. Helen Sanderson describes it as:

" …a process of continual listening and learning, focused on what is important to someone now, and for the future, and acting upon this in alliance with their family and friends. It is not simply a collection of new techniques to replace individual program planning. It is based on a completely different way of seeing and working with people with disabilities which is fundamentally about sharing power and community inclusion."1

*(*Sanderson, H. (2000) PCP: Key Features and Approaches, http:// www.helensandersonassociates.co.uk*)*

The NSW Community Participation Program Guidelines state that service providers should move to person centred planning and identified five key issues. These are that:

_ the person is at the centre

_ their wider social network is involved as full partners

_ there is a partnership between the person, their family and the service provider

_ the whole of life is considered

_ there is continued listening, learning and action.

(NSW Community Participation Program Guidelines 2006, DADHC, www.dadhc.gov.nsw.au)

2.6.5 Life Skill Education

Life skills have been defined by the **World Health Organization (WHO)** as "abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life". They represent the psycho-social skills that determine valued behaviour and include reflective skills such as problem-solving and critical thinking, to personal skills such as self-awareness, and to interpersonal skills. Practicing life skills leads to qualities such as self-esteem, sociability and tolerance, to action competencies to take action and generate change, and to capabilities to have the freedom to decide what to do and who to be. Life skills are thus distinctly different from physical or perceptual motor skills, such as practical or health skills, as well as from livelihood skills, such as crafts, money management and entrepreneurial skills .Health and livelihood education however, can be designed to be complementary to life skills education, and vice versa.

Key Life Skills

Life skills include psychosocial competencies and interpersonal skills that help peoplemake informed decisions, solve problems, think critically and creatively, communicateeffectively, build healthy relationships, empathize with others, and cope with managingtheir lives in a healthy and productive manner.

Essentially, there are two kinds of skills -those related to thinking termed as ***"thinking skills"***; and skills related to dealing withothers termed as ***"social skills"***.

While thinking skills relate to reflection at a personal level, social skills include interpersonal skills and do not necessarily depend on logical thinking. It is the combination of these two types of skills that are needed for achieving assertive behaviour

and negotiating effectively. "***Emotional"*** can be perceived as a skill not only in making rational decisions but also in being able to make others agree to one's point of view. To do that, coming to terms first with oneself is important. Thus, self management is an important skill including managing/coping with feelings, emotions, stress and resisting peer and family pressure. Young people as advocates need both thinking and social skills for consensus building and advocacy on issues of concern.

The Ten core Life Skills as laid down by WHO are:

1. Self-awareness
2. Empathy
3. Critical thinking
4. Creative thinking
5. Decision making
6. Problem Solving
7. Effective communication
8. Interpersonal relationship
9. Coping with stress
10. Coping with emotion

The method used in teaching of Life Skills builds upon the social learning theory and on what we know of how young people learn from their environment; from observing how others behave and what consequences arise from behaviour.

It involves the process of Participatory learning using 4 basic components:

1. Practical activities
2. Feedback and reflections
3. Consolidation and reinforcement
4. Practical application to day to day life challenges.

2.7 Vocational Training and Independent Living

Approximately 156 million in the world (nearly 3% of world's population) are persons with intellectual disability. It is estimated that 1.8% (18.53 million) of total population constitutes Persons with disability in India. The prevalence of intellectual disability is

94 out of 1,00, 000 population (NSSO 2002). There is a paradigm shift in the approach to disability rehabilitation from charity mode to right based. This enables inclusion of persons with disabilities in all aspects of society. Inclusion of persons with disability in Employment is a trend being practiced all over the world. For many people who have disabilities, work is an important goal, but because of physical and attitudinal barriers in the workplace and society, they were denied productive work in competitive work environments. However, Persons with intellectual disability have been proving their skills in specific jobs. Department of Adult Independent Living (DAIL) of National Institute for the Mentally Handicapped (NIMH) strives towards improving quality of life of Persons with Intellectual Disability through vocational training and placement services. As part of these services, the Adult persons with intellectual disability are trained to acquire vocational and independent living skills. Independent living means living like anyone else with same limitations and same opportunities. Persons with intellectual disability also observe the same style of living like other individuals of their society. The ability of Persons with intellectual disability to be productive was linked to social behaviour and practice and bore very little relationship to their intelligence (Cornelius D.J.K, 2009).

The competencies and the instructional areas related to vocational training are listed below:

Competencies		**Instructional area**
Managing family finances	-	Identifying coins, rupee notes and making a change.
	-	Writing cheque.
Managing a home	-	Decorating and maintaining Classroom.
	-	Aware of basic home repairs.
	-	Planning balanced meals
	-	Eating proper food
	-	Understanding the need of vitamin
Caring for personal needs	-	Developing hygiene and grooming skills
	-	Learning common games

	-	Learning first aid skills
	-	Obtaining knowledge of common illness and when to seek medical attention.
Buying and preparing food	-	Mathematics- basic skills.
	-	Developing table manners
	-	Planning & preparing nutritious meals
	-	Obtaining knowledge about super market
	-	Storing food
	-	Kitchen cleanliness
Buying and caring for clothes		
	-	Reading & following label directions
	-	Using a clothes washing machine
	-	Ironing
	-	Selecting clothes (Choosing clothes, styles)
	-	Sorting clothes for laundry.
Engaging in civic activities	-	Social skills
	-	Identifying own country and state
	-	Aware of the right for voting.
	-	Aware of personal rights as a citizen
	-	Basic knowledge of politics – Chief- Minister, Governor, Prime Minister, President – Election.
Recreation and leisure time	-	Physical education

	-	Aware of community recreation
	-	Spectator sports.
Getting around the community	-	Reading transportation schedule
	-	Reading traffic signs.
	-	Understanding the function of traffic police.
	-	Planning a trip
	-	Riding a bicycle
Achieving self- awareness	-	Identifying values and emotions.
	-	Identifying conflicts and coping with stress
	-	Expressing feelings (anger, joy)
	-	Experiencing group interaction
	-	Developing awareness of body.
Acquiring self confidence	-	Understanding potential of Performance
	-	Developing awareness of strength and weakness.
	-	Awareness of personal behaviour
	-	Accepting praise and criticism
	-	Accepting teasing
	-	Listening actively to others
Achieving socially responsible behaviour	-	Developing acceptable behaviour during outings.
	-	Involving in activities to improve strength and overcome weakness
	-	Recognizing the rights of self & others.

	-	Expressing realistic ambitions and hopes.
Maintaining adequate interpersonal skills	-	Ability to develop and maintain friendship.
	-	Identifying different levels of friendship.
	-	Developing self organization in home, school and community
	-	Developing ability to listen, ask questions, and respond appropriately.
	-	Developing appropriate relationship with opposite sex.
Achieving independence	-	Completing assigned responsibilities
Achieving problem solving skills	-	Accepting consequences for personal action.
	-	Taking assistance in difficulties.
Communicating adequately with others	-	Recognition and responding appropriately during emergency situations.
	-	Realizing the need for reading and writing.
Knowing and exploring occupational Possibilities	-	Realizing the need of work.
	-	Developing an attitude to get trained and seek on employment.
Making appropriate occupational courses	-	Obtaining knowledge of various types of jobs.

	-	Identifying appropriate types of work.
	-	Identifying strength and weakness for the jobs.
	-	Identifying possibilities for entry level job.
Exhibiting appropriate work habits	-	Following written and verbal instructions.
	-	Aware of the team concept.
	-	Developing ability to take turns.
	-	Developing ability to agree/ disagree appropriately.
	-	Developing awareness of the importance of attendance, punctuality, quality of work, and productivity
	-	Realizing the need for physical exercise for well being and success toward work and community living.

Since the ultimate aim of education is to provide opportunity for employment, the vocational training is crucial for employability.

2.8 ''Check Your Progress''

1) Define Intellectual Disability. Briefly discuss the types and characteristics of Intellectual Disabilities.

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2) Discuss briefly about the different assessment tools available in Indian context to assess the children with Intellectual Disabilities.

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3) What are the promotional procedures of FACP?

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4) What is assessment ?

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5) Write a few examples for NRT and a few for CRT.

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6) What are the purposes of assessment you find in your case of assessment for IEP?

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7) Explain the need and importance of social skills training for persons with mental retardation.

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8) Mention 5 social skills, which are to be taught at primary and secondary levels.

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9) Define IEP. State the components of IEP.

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10) Briefly discuss the importance of Vocational Training.

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2.9 Let Us Sum Up

- *Intellectual disability* is a disability characterized by significant limitations in both **intellectual functioning** and in **adaptive behaviour**, which covers many everyday social and practical skills. This disability originates **before the age of 18**. (**American Association on Intellectual and Developmental Disabilities (AAIDD)- 2010)**
- Types and Characteristics of ID.

- Each Mentally Retarded child is unique in nature. Special Education can identify the unique need of each child through proper assessment and plan intervention activities as per the requirement. Assessment is a pivotal and the first step of rehabilitation programme for the Mentally Retarded children. The following points need to be attended by the students.
- Assessment is a collection and organisation of information for making administrative and/ or instructional decision for an individual or group.
- Assessment is carried out for various purposes. Some of these purposes are:- (a) initial screening and identification, (b) determining eligibility, (c) determination of current performance level and educational need, (d) decision about classification and programme placement, (e) determination and evaluation of teaching programmes and strategies, (f) development of educational programme, (g) monitoringstudents performance, (h) evaluating the effectiveness of educational intervention programme.
- Assessment report should be clear so that it will be useful both by the assessor and the assessee.
- There are different types of assessment. Based upon the manner of data collection it is formal and informal assessment and based upon the construction of test assessment could be Norm Referenced Assessment (Test) or Criterion Referenced Assessment (Test).
- NRA/NRT helps more in administrative decisions where as the CRA/CRT helps more in instructional purpose.
- Most of the psychological test such as Development Test, Intelligence Test and Aptitude Test are NRT in nature where as most of the behavioural scale used in Special Education are CRT in nature.
- For school age children, the first criterion referenced scale developed to suit Indian conditions is Madras Developmental Programming System (MDPS). Later, BASIC-MR and Functional Assessment Checklist for Programming (FACP) were developed. Similarly, with the emphasis on early childhood special education, Upanayan checklist and Portage kit, translated in Hindi and adapted to Indian culture are developed and are used for assessment and programming in early intervention programmes.

- Assessment tools are not without problems. The tester, testee variables play an important role in arriving at accurate assessment information. And the sociocultural factors and local practices play a major influence in standardizing a tool.
- The tester should be qualified and proficient in conducting a test and administering a tool, as it requires scientific understanding and objective interpretation of the information elicited.
- Functional Academics and Social Skill Training.
- Assistive Devices and Concept of IEP. Different components of IEP also discussed.
- Define Vocational training and Independent living skills.

2.10 References

1. Peshawaria, R (1992) Behavioural Approach in Teaching M.R. Children – A manual for teachers, NIMH, Secunderabad.
2. Myreddi, V. and Narayan J. (1998) Functional Academics for students with mental retardation – a guide for teachers, Secunderabad: NIMH.
3. Peshawaria, R (1995) Understanding Indian Families having persons with M.R., NIMH, Secunderabad.
4. Thressiakutty, A.T., and Rao, G.L., (2004) Curriculum for vocational education, Transition of persons with mental retardation from school to work, National Institute for the Mentally Handicapped, Secunderabad.
5. www.ilsi.net.au, ILSI Training manual.
6. Sarva Siksha Abhigyan, Training Module on Mental Retardation

For Further Studies

- Nanda, B. P. (2012). Challenged Children Problems and Management. Ankush Prakashan, Kolkata.
- Baroff, G. (2nd Ed.). Mental Retardation : Nature and Needs, Aemisphere Publication.

Unit-3 ❐ Autism Spectrum Disorder: Nature Needs And Intervention

Structure

Introduction:

Autistic Spectrum Disorder (ASD) is a heterogeneous group of neuro-behavioral syndromes. It manifests as differences in development in three main areas: verbal and non-verbal communication, social interactions and imagination, which can be seen in repetitive and restricted leisure or play activities. This is referred to as the triad of impairments. Autism may occur alone or may be accompanied by sensory processing difficulties, mental retardation, hyperactivity, motor difficulties, seizures and/or learning disability. But regardless of the other accompanying conditions, it is autism that requires attention. Autism is known as a 'spectrum disorder,' because symptoms can range from a mild learning and social disability to more complex needs with multiple difficulties and often very unusual behaviour. Autism results in qualitative impairments. What this means is that in a person with autism, skills are present (not absent) but do not develop age appropriately. Therefore different skills develop at different pace in different people with autism. Another characteristic and

perhaps the most confusing feature of autism is an uneven skill development. If a child were at the biological age of 4 years, his overall development would be of a 4-year child. In autism however a 4-year child, may have speech development like that of a 2-year, gross motor skills developed like an 8- year, fine motor skills of a 6-year and self-help skills of a 3-year child. So a person is able to do basic arithmetic but not speak; or may know the alphabet, numbers and nursery rhymes, but may not be able to ask or tell his/her needs or desires. Because of all these characteristics, no two people on the autistic spectrum look or behave the same. They have certain common set of social, communication and sensory issues that affect their behaviour in predictable ways. Their language skills may range from those who do not speak to those who display complex, grammatically correct speech. Some individuals may show only slight delays in language and greater difficulties in making friends. Some may have no sensory difficulties while for others every day is too much of sensory information. However, each person has his or her own strengths and limitations and like all individuals, each person with autism has a unique personality and combination of characteristics.

Objective : Upon Completion, students will be able to—

a. Define ASD, classified types and know the characteristics.

b. Describe the various tools and areas of assessment of ASD.

c. Gain and understanding of different instructional approaches and teaching methods pertaining to ASD

d. Develop and analysis vocational training and career opportunities.

Unit-3.1 ❐ Definition, Types and Characteristics.

Structure

3.1.1 History and Brief Note

History

- In 1943, Leo Kanner released an article titled "Autistic Disturbances of Affective Contact"

- It was in this article that 'autism' was first used to describe 11 children exhibiting what are now recognized as symptoms of autism
- Kanner noted that: "The basic desire for aloneness and sameness has remained essentially unchanged..."
- It was based upon this observation that he decided to use the word 'autism' itself, because of it's meaning in Greek which is 'self
- Autistic adults and children alike were being mLsdiagnosed in the early twentieth century.

The word autism has been derived from 'auto' and 'ism', which means 'to be with oneself. In 1906, Eugene Bleuler, a Swiss psychiatrist used autism as an adjective. Initially childhood schizophrenia was used to refer to this condition. Later, after several researches **Leo Kanner (1943)** used autism as a noun and differentiated autism from schizophrenia when he described 11 self-absorbed children who had "autistic disturbances of affect contact."

Autism is the most common of the Pervasive Developmental Disorders, affecting an estimated 2 to 6 per 1,000 individuals. Autism can't be identified distinctively in any subgroup, viz., race, ethnic or SES in its number or intensity. Current estimates suggest that approximately 400,000 individuals in the United States have autism. In India's current population, it is estimated that approximately 1.7 million autistic persons in the country have autism or autistic-like symptoms. Autism is three to four times more likely to affect boys than girls. Autism occurs in individuals of all levels of intelligence. Approximately 75 percent are of low intelligence while 10 percent may demonstrate high intelligence in specific areas. **One common misconception about autism is that: it is a condition that only affects children. The truth is children with autism grow up to become adults with autism.**

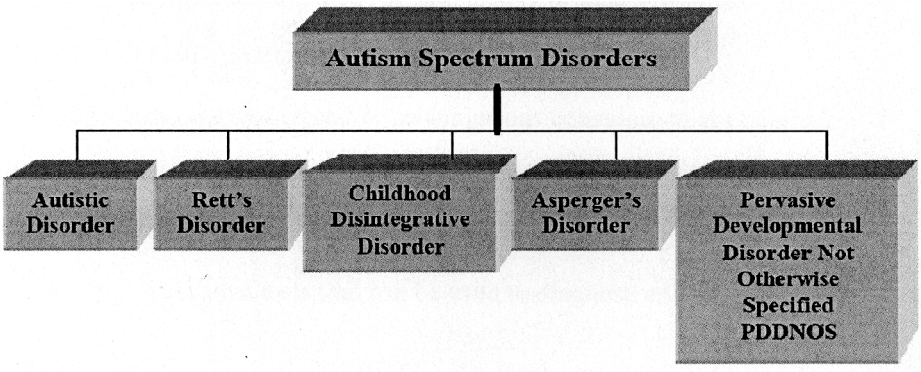
While the disorder is not rare, the majority of autistic people has not been diagnosed and do not receive the services they need. This problem occurs in many countries, but is especially true in where there is a tremendous lack of awareness and misunderstanding about autism even among the medical professionals, who may either misdiagnose or under diagnose the condition. So, diagnosis of autism is a major problem in science before entering into its intervention. At first, autism can be described by the symptoms like.

- **AUTISM**
- A lone even with others
- U unusual play
- T waddle and twirl object
- I indifference to other people
- S trance movements and mannerism
- M sot have a learning disability

3.1.2 What is Autism

Definition

ASD is a lifelong neurodevelopmental disability, a behaviorally defined syndrome that is recognized by the manifestation of behavioral characteristics across multiple areas of functioning. Characteristics are observed, to varying degrees, in social relationships, communicative competence, pattern and range of interests, and sensory responsiveness. These characteristics are generally evident during the child's early years, and must adversely affect educational performance. The definition of ASD has been written sufficiently broad to encompass children who exhibit a range of characteristics related to ASD. This includes Autistic Disorder, Rett's Disorder, Childhood Disintegrative Disorder, Asperger's Disorder, and Pervasive Developmental Disorder Not Otherwise Specified, Children with mental retardation or significant behavior disorders are not automatically excluded since, in many cases, these conditions coexist with ASD.



Autism means a developmental disability. Now Autism is called a Neuro-biological disorder, significantly affecting verbal and non verbal communication and social

interaction, generally evident before age 3. It adversely affects a child's educational performance. Other characteristics often associated with""Autism are-engagement in repetitive activities, stereotyped motor movements, unusal responses to sensory experiences and resistance to enviornmental changes.

- Autism is a complex developmental disability that typically appears during the first three years of life

  It is widely recognized as a neuron developmental disorder that affects the functioning of the brain.
- It is a spectrum disorder
- Children with autism are unable to interpret the emotional states of others, failing to recognize anger, sorrow or manipulative intent
- It impacts 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
- Stereotypic (self-stimulatory) behaviors may be present
- In some cases, aggressive and/or self-injurious behaviors might be present
- It is not a behavioral, emotional or conduct disorder
- It is not a mental illness
- There are no medical tests that can be used to diagnose autism

3.1.3 Signs and symptoms of autism in babies and toddlers

- If autism is caught in infancy, treatment can take full advantage of the young brain's remarkable plasticity.
- Although autism is hard to diagnose before 24 months, symptoms often surface between 12 and 18 months.
- If signs are detected by 18 months of age, intensive treatment may help to rewire the brain and reverse the symptoms.
- The earliest signs of autism involve the absence of normal behaviours but not the presence of abnormal ones so they can be tough to spot.
- Some autistic infants don't respond to cuddling, reach out to be picked up, or look at their mothers when being fed.

3.1.3.1 Early signs of autism in babies and toddlers

- Doesn't make eye contact (e.g. look at you when being fed).
- Doesn't smile when smiled at.
- Doesn't respond to his or her name or to the sound of a familiar voice.
- Doesn't follow objects visually.
- Doesn't point or wave goodbye or use other gestures to communicate.
- Doesn't follow the gesture when you point things out.
- Doesn't make noises to get your attention.
- Doesn't initiate or respond to cuddling.
- Doesn't imitate your movements and facial expressions.
- Doesn't reach out to be picked up.
- Doesn't play with other people or share interest and enjoyment.
- Doesn't ask for help or make other basic requests.

3.1.4 What causes autism

- A specific cause is not known, but current research links autism to biological and neurological differences in the brain but also environmental influences play a role as well
- Recent researchers have shown Mt autism does run in families, but not in a clear-cut way
- Siblings of people with autism have a 3 to 8 percent chance of being diagnosed with the same disorder

  It can be safely said that: Autism is not caused by bad parenting or 'refrigerator mothers' as was suggested by psychiatrist Bruno Bettelheim in the 1950s.

3.1.5 Characteristics Associated with Autism Spectrum Disorders

Characteristics :

According to DSM IV, Autism in such a developmental disorder under P.D.D., that includes three qualititive deficits-

1. Lack of Socialization
2. Lack of Communication
3. Lack of Flexibility.

There three are together called 'Autistic Triad'

1. Lack of Socialization :

- Deficit in social emotional, reciprocity.
- Deficit in maintaining, developing and understanding relationship to parents, friends and siblings.
- Deficit in eye contact.
- Inefficiency in pretend play and term taking. Cannot ask for help or cannot help other too.
- Attention deficit need an overview of one's work and educational experience.

2. Lack of Communication :

- Deficit in verbal and non verbal communication behaviour used for social interaction.
- Echolalia
- Pronominal reversal
- Immediate and delayed verbal imitation.
- Monotone.
- Use of Jargon.
- Laclc of joint attentions
- Lack of emotional and body gesture.

3. Lack of Flexibility :

- Sterotype or repetative motor movements, use of object and speech.
- Maintainance of sameness.
- Highly restricted, fixated interest that are abnormal in intensity and focus.
- Self injurious activities.

- Self stimulous activities.
- Hypo and Hyper activity to sensory input.

3.1.5.1 Common Characteristics in Autism Spectrum Disorders.

Social Characteristics

- May exhibits poor eye contact.
- May not differentiate between strangers and those seen every day or show anxiety towards strangers.
- May have a narrow range of emotions inappropriate displays.
- May not enjoy social games like peek-a-boo or patty cake.
- May lack pretend/imaginative play skills.
- May not show an awareness of others.
- May have difficulty reciprocating emotionally and socially and have difficulty relating to others.
- Often demonstrate little or no interest in establishing friendships, or have difficulty in developing and maintaining friendships.
- Difficulty initiating or sustaining play with peers or groups.
- May lack understanding of social cues, gestures, emotional expressions.
- May lack understanding of how others feel/express moods,
- May have strange fears or lack fear of real danger.
- May repeat preferred play schemes over and over again.

Communication Characteristics

- May have difficulty in reading and showing emotion (e.g. little smiling or bland face).
- May be unusually qutiet.
- May not respond to name, or appear not to hear or attend.
- May not babble and coo.
- Language may be delayed.
- Stereotyped or idiosyncratic speech is common -may have echolalia (repeating words or phrases they hear) either immediately or later.
- Used to say a few words, but now does not.
- Often have trouble imitating or using nonverbal gestures and appropriate facial expressions to communicate.

- May have difficulty initiating interaction with others.
- May appear not to be interested in communicating with others.
- May not imitate or demonstrate functional and pretend play.
- May not point or wave bye-bye.
- Abnormal pitch, intonation, rhythm, stress.
- Grammatical structure may appear immature.
- Difficulty understanding & interpreting pragmatic language.

Behavior Characteristics

- May dislike being held or stiffen when held.
- Exhibits repetitive body movements such as hand or finger flapping or rocking.
- May be extremely sensitive to some auditory stimuli.
- May not respond to some auditory stimuli.
- May exhibit stereotyped and repetitive use of language or idiosyncratic language.
- May perseverate on certain activities.
- May demonstrate persistent preoccupation with parts of objects.
- May resist changes in routines; unreasonable insistence on following routine.
- May lack fear of real danger.
- May explore environment by inappropriate methods such as licking, smelling and handling objects.
- Avoids looking at other people.
- Avoids contact with other people, preferring to touch objects.

Learning Characteristics

- Will perform unevenly within and across skill areas, sometimes demonstrating exceptionality in some areas.
- Resists changes in the learning environment.
- Has difficulty waiting or using unstructured time.
- May not generalize skills to other settings.
- Has problems with abstract and conceptual thinking; requires concrete interactions.
- Uses and interprets speech literally; doesn't usually read facial expressions, body language or other social cues.

- May be impulsive, compulsive, or perseverate on certain activities; behavior is inconsistent.
- May be distracted by auditory or visual stimuli.
- Has trouble with organizational skills, planning, or making choices.
- Relies on learned routines, cues, and other learned patterns.

3.1.5.2 Related Characteristics in Autism Spectrum Disorders

Sensory/Motor Characteristics

- May be over or under sensitive to certain sensory stimuli. These are Sounds, Tastes, Visual input, Textures and Smell
- May have insensitivity to pain/ high pain threshold.
- Poor fine motor skills (e.g. writing may be extremely difficult and laborious or sloppy, off the lines, and out of the boundaries).
- Gross motor skill difficulties. These are: Difficulty with coordination, Balance problems and Playground activities or sports may be difficult.
- Limited awareness of the physical presence or needs of others.
- Unaware of their bodies place in space.

Attention / Organization Characteristics

Poor Concentration:	Poor organizational skills:
> Often off task	> May lose papers, assignments, etc.
> Distractible	> Desk may be messy
> Overloads easily	> Backpack never emptied
> May be disorganized	> May not be able to predict or organize things needed for homework: book, packet, etc.
> Difficulty sustaining attention.	> May not remember homework
	> Papers can be messy and written work unorganized
	> Difficulty knowing how and where to start work.

3.1.6 Types

Autism spectrum disorders are disabilities with many variations in symptoms and/ or behaviours. Furthermore, people with autism spectrum disorders vary widely in abilities, intelligence, and behaviours across those indicators. In other words, characteristics associated with autism spectrum disorders may be observed in a range

of mild to very severe forms. For example, some children do not speak; others have limited or even advanced language skills. Those with more advanced language skills tend to use a small range of topics, as well as have difficulty with abstract concepts and pragmatic (practical) language skills. Repetitive play skills, a limited range of interests, and impaired social skills are generally evident as well. Unusual responses to sensory information such as loud noises, lights, and certain textures or food or fabrics are also common. Because the three disability groups included in autism spectrum disorders are syndromes (i.e., a collection of symptoms), different children experience distinct characteristics with varying degrees of impairments. Each child is at different developmental levels from other children. Each child will be ready to learn certain skills at different ages.

The Diagnostic and Statistical Manual for Mental Disorders (DSM-1V-TR) is used to classify disabilities and provides refined definitions of autism spectrum disorders. ASD are a set of disability groups that are identified under the heading of Pervasive Developmental Disorders (PDD). PDD are characterized by severe and pervasive impairment in several areas of development, including social interaction skills, communication skills, or the presence of stereotyped behaviour, interests and activities.

- **Figure 1-Shows the five disability disorders under the umbrella of FDD.**

Pervasive Developmental Disorders				
Pervasive Developmental Disorder Not Otherwise Specified	Asperger's Syndrome	Autistic Disorder	Childhood Disintegrate Disorder	Rett's Disorder

Autism spectrum disorders (see figure 2) account for three of the five Pervasive Developmental Disorders: pervasive developmental disorder-not otherwise specified, Asperger's Syndrome, and autistic disorder. The term, autism spectrum disorder, implies that the three disorders share common characteristics, but also have unique qualities that allow for a differential diagnosis of each. Consequently, the severity of impairment varies within and across each individual diagnosed with an autism spectrum disorder.

Figure 2 - Autism Spectrum Disorders (ASD)

Autism Spectrum Disorders (ASD)		
Pervasive Developmental Disorder Not Otherwise Specified	Asperger's Syndrome	Autistic Disorder

A brief description of the three categories under the term ASD is provided below.

- **Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS)**

The category of Pervasive Developmental Disorder-Not Otherwise Specified is used when a child does not meet the diagnostic criterion for other disabilities, but does display a severe and pervasive impairment in the development of social interaction or communication skills or the presence of restricted, repetitive, and stereotyped patterns of behaviour, interests and activities.

- **Asperger's Syndrome**

Children with Asperger's Syndrome have significant difficulties in social interaction and may exhibit restricted, repetitive and stereotyped patterns of behaviour, interests and activities. Asperger's syndrome causes observable significant impairment in social, occupational or other important areas of functioning. In contrast to Autistic Disorder student with Asperger' Syndrome do not display clinically significant delays in language acquisition although there may be deficits in the practical use of language and social-communication skills. Students with Asperger's Syndrome typically do not demonstrate cognitive delays during the first three years of life.

- **Autism/Autistic Disorder**

Children with autism have significant difficulties in social interaction, expressive and

receptive communication and may exhibit restricted, repetitive and stereotyped patterns of behaviour, interest, and activities. Onset of autism may be evident before age three, with observable delays and/or abnormal functioning in social interaction, language, or symbolic play.

3.1.6 Diffential Diagnostic Feature : Autism and Related disorder

Feature	Autism	Asperger	Rett	CDD	PDD-NOS
Social Disturbance	Severe	Moderate–severe	Variable	Severe	Variable
Language/ Communication Impairment	Marked	Good verbal ability, poor communication	Very marked	Marked (previously normal)	Variable
Restricted interests	Marked, mannerisms, trouble with change, occasionally savant ability	Usually highly circumscribed interests (interfering with normal functioning)	Significant psychomotor retardation	Marked, as in autism	Variable—often troubled by change, Mannerisms may be less prominent
Motor issues	Often preserved early but poor later when imitation is required	Often clumsy, with fine and gross motor difficulties	Significant loss of motor abilities, hand-washing stereotypies	Often preserved but lose some self-care skills	Variable
Onset	Always before age 3 yr, often before age 1 yr. A minority regress after normal development	Problems often recognized in preschool. Motor delays may have been noted	Before age 5 yr (typically, onset with loss of skills)	By definition, child normal until age 2 yr; then major loss of skills and dramatic "autistic-like" picture	Variable

3.1.6 Treating Autism

- **Behavioral Interventions -** Research suggests that early, intensive behavioral interventions may improve outcomes for children with autism and help the children achieve their maximum potential.
- **Sensory Integration -** Integration and interpretation of sensory stimulation from the environment enhances cognition.
- **Diet:** People with autism are more susceptible to allergies and food sensitivities than the average person. The most common food sensitivity in children with autism is to gluten and casein.
- **Vitamin Therapy:** Parents have reported that they have tried B6/magnesium and/or DMG, often with good or even spectacular results.

AUTISM

Persons with autism may possess the following characteristics in various combinations and in varying degrees of severity.

Inappropriate laughing or giggling

No real fear of dangers

Apparent insensitivity to pain

May not want cuddling

Sustained unusual or repetitive play; Uneven physical or verbal skills

May avoid eye contact

May prefer to be alone

Difficulty in expressing needs; May use gestures

Inappropriate attachments to objects

Insistence on sameness

Echoes words or phrases

Inappropriate response or no response to sound

Spins objects or self

Difficulty in interacting with others

1-800-3AUTISM

Autism Society of America

7910 Woodmont Avenue, Suite 650 Bethesda, MD 20814-3015

January is National Autism Awareness Month.

Adapted from original by: Professor Randie-Short, University of Queensland, Brisbane Children's Hospital, Australia

3.2 ❐ Tools and Area of Assessment

Structure :

3.2.1 Interdisciplinary and Multidisciplinary assessment

3.2.1.1 Interdisciplinary assessment

3.2.1.2 Multidisciplinary assessment

3.2.2 Different Diagnostic tools for ASD

3.2.3 Assessment of ASD

3.2.3.1 Child Health History

a. Prenatal History

b. Perinatal History

c. Past Medical History

d. Review of Systems

3.2.3.2 Developmental and Behavioral History of the Child

3.2.3.3 Family Medical and Mental Health History

3.2.3.4 Medical Evaluation

3.2.3.4.1 Components of a Medical Examination

3.2.3.4.1. a-Physical and Neurodevelopment Examination

3.2.3.4.1. b-Developmental Neurological Examination

3.2.3.5 Laboratory Tests

3.2.3.6 Genetic Testing and Consultation

3.2.3.7 Neurological Laboratory Evaluation

3.2.3.8 Other Laboratory Investigations

3.2.3-9 Sensory Evaluation

3.2.3.10 Direct Behavior Observation

3.2.3.11 Play Environment

3.2.3.12 Degree of Structure

3.2.3.13 Observation Domains

3.2.3.14 Cognitive Assessment

3.2 Tools and Area of Assessment

Tool is a monitor to Guidelines and to refers to the identification of children birth through age 5 most likely to have an ASD and/or developmental delay and it applies to children different age level and also to the process of initiating the evaluation of a child's different in this age groups. The terms Assessment used to describe the intervention planning process.

3.2.1 Interdisciplinary and Multidisciplinary assessment

The interdisciplinary and multidisciplinary processes stress the importance of gathering information from a variety of disciplines that have unique knowledge of a particular aspect of the child and family. Professionals most often involved with persons with ASD include psychologists, psychiatrists, neurologists, pediatricians, other physicians, speech pathologists, audiologists, occupational therapists, social workers and behavioral and educational specialists. Input from all involved professionals may be necessary to obtain a complete picture of the child and family for effective service planning.

3.2.1.1- Interdisciplinary assessment requires respect, integration and coordination among professionals with diverse backgrounds. The interdisciplinary team model is the preferred model in the evaluation and assessment of ASD. The interdisciplinary process involves professionals from various disciplines providing their unique contributions regarding aspects of the child's development and family functioning. The defining feature of this approach is the ability to integrate and synthesize information through an interactive group process. Members are aware that their interpretation informs the whole and are able to formulate conclusions and recommendations based upon the combined efforts of all. The members are psychologists, psychiatrists, neurologists, pediatricians, other physicians, speech pathologists, audiologists, occupational therapists, social workers and behavioral and educational specialists.

3.2.1.2-Multidisciplinary process can take with the child and family participating in numerous sessions or it can take place over the course of several months. Professionals in a multidisciplinary process often operate without benefit of collaboration with other team members and often draw separate conclusions based

upon their particular experience. This is a highly stressful process for children and families. Information gathered using the multidisciplinary model is often redundant, and the results from other multidisciplinary team member evaluations may not be available at the time they are needed by another team member. At times, professionals may repeat portions of previous assessments, regardless of the information available, due to lack of a relationship with the other professional and/ or concerns regarding knowledge or conclusions drawn.

3.2.2 Diagnostic tools for ASD

There are many areas to assess of children with ADS. Some important diagnostic tools for ASD which should be mentioned are -

1) Clinical Assessment:

- CARS rating system (Childhood Autism Rating Scale) developed by Eric Schopler in the early 1970s.Bhavior. Using a 15-point scale, professionals evaluate a child's relationship to people, body use. and adaptation to change, listening response, and verbal communication.
- The Checklist for Autism in Toddlers (CHAT) is used to screen for autism at 18 months of age. It was developed by Simon Baron-Cohen in the early 1990s to see if autism could be detected in children as young as 18 months. The screening tool uses a short questionnaire with two sections, one prepared by the parents, the other by the child's family doctor or pediatrician.
- The Autism Screening Questionnaire is a 40 item screening scale that has been used with children four and older to help evaluate communication skills and social functioning.
- The Screening Test for Autism in Two-Year Olds, being developed by Wendy Stone at Vanderbilt, uses direct observations to study behavioral features in children under two. She has identified three skills areas - play, motor imitation, and joint attention - that seem to indicate autism.
- Autism Diagnostic Interview -Revised (ADI-R) The ADI-R (Rutter M, Le Couteur et al., 1989) is a standardized (93 items), structured interview based on ICD-10 definition of autism for caregivers of individuals with autism before the age of 36 months. It is used for diagnosing autism, planning treatment and distinguishing autism from other developmental disorders.
- Autism Diagnostic Observation Schedule (ADOS)-ADOS diagnose and assess

autism and pervasive developmental disorder (FDD) This semi-structured assessment can be used to evaluate almost anyone suspected of having autism from toddlers to adults, from children with no speech to adults who are verbally fluent adolescents and adults.

- Autism Behavior Checklist (ABC) The Autism Behavior Checklist (ABC) is a list of questions (57 items in 5 categories) about a child's behaviors. The ABC was published in 1980 (Krug et al., 1980) and is part of a broader tool, the Autism Screening Instrument for Educational Planning (ASIEP) (Krug et al., 1978). The ABC has been used with children as young as 3 years of age.
- Behavioral Summarized Evaluation (BSE) The Behavioral Summarized Evaluation (BSE) (Barthelme et al., 1992) is a rating scale developed in France and designed to measure changes in behavior in autistic children and adolescents.
- Social Communication Questionnaire (SCQ) The SCQ is a cost effective way to determine whether an individual should be referred for a complete diagnostic evaluation or not. The questionnaire can be used to evaluate anyone over 4 years age as long as his/her mental age exceeds 2 years. It is available in two forms, namely life time and current form, each composed of 40 yes or no questions.
- Gilliam Autism Rating Scale (GARS) The Gilliam Autism Rating Scale (GARS) (Gilliam, 1995) is a 42 items (grouped under three subscales) behavior rating scale designed to measure the severity and probability of autism from age 3yrs to 22 yrs Recently two standardized tests on Indian population has been developed.
- Autism Diagnostic Check-List (ADCL) Autism Diagnostic Check-List (Banerjee, 2007) is a 60 items (with six sub-scales) check list in both English and Bengali version. The test diagnoses and help assessing the impairment in specific area/s for planning of management programmed.
- Indian Scale for Assessment of Autism (ISAA) Developed by NIMH, 1SAA is a 45 itemed scale (6 subscales) to diagnose and assess autism.

Above the all types of check list are used to measure and asses the children with ASD in clinical environment that's why it's call Clinical Assessment

(2) Behavioural Assessment : The process of understanding the complex behaviour in simplier forms based on 'ABC' model.

(3) Observational Assessment : Systematic observation of behaviour helps in monitoring teaching methodologoies. It has two steps—Formal and Informal.

(4) **Educational Assessment :** Selection of tests depends on the purpose for which the assessment to be carried. Like as—N.R.T, C.R.T.

(5) **Functional Assessment :** Assessment of purposeful behaviour.

3.2.3 Assessment of ASD

There are many areas of assessments. These are;

3.2.3.1 Child Health History

A detailed child health history would include prenatal and perinatal history, a complete health history of the child (including review of pertinent medical records) and family health history. This information can be obtained by the physician or another health care professional (e.g., pediatric nurse, medical social worker) with adequate training and experience in conducting health history interviews. Health care professionals often are able to obtain this information with the provision of basic guidelines, but the information obtained should be reviewed by a physician. Use of a health history questionnaire is acceptable practice with the provision that relevant issues are clarified by an in-person interview. Whether obtained by interview or questionnaire, essential elements of the health history should include the following.

a. Prenatal History:

- Obtain information about previous pregnancies, since previous miscarriages may be a clue to the presence of genetic disorders.
- Document medical illnesses, which occurred during the pregnancy, since prenatal infections (such as cytomegalovirus and toxoplasmosis) can affect fetal development.
- Determine medications taken during pregnancy, as they may affect the development of the fetus or predispose the newborn to medical conditions, such as neonatal hypoglycemia in an infant born to a mother with gestational diabetes. Anticonvulsants, for example, are frequently given to mothers with epilepsy.

b. Perinatal History:

- Obtain information about the length of gestation, onset of labor, and any complications that occurred during labor and delivery. If, for example, a Caesarian section had been performed, determining whether an indication of fetal distress would suggest that further information might be helpful, such as exploring for signs of fetal hypoxia.

- Establish the infant's birth weight, length and head circumference, which are helpful in determining whether intra-uterine growth retardation was present and evaluating gestational age.
- Document the neonatal course, as it can be quite useful in evaluating the onset of subsequent developmental issues. Early feeding difficulties, for example, can be due to neurological abnormalities of coordination of suck and swallow.

c. Past Medical History:

- Obtain information about all hospitalization, surgeries and significant injuries, especially those with head injuries associated with loss of consciousness.
- Document and explore previous medical illnesses, as they may provide information about the need for specific medical diagnostic testing or treatment. Examples of this would be recurrent episodes of vomiting and dehydration, which could be caused by a deficiency in amino acid metabolism.
- Specifically question the possibility of clinical seizure activity, as a significant number of children with ASD (approximately 30 percent) develop seizure disorders over time.
- Obtain specific documentation of infectious diseases and immunization status. This information may be helpful in determining whether any immunological deficiencies might be present and warrant further evaluation.
- Determine dietary information, which is extremely relevant, since many children with ASD are on restricted diets, either by self-selection or as part of various treatment methodologies. This information should be specific enough to determine if the child is at nutritional risk due to inadequate intake of various essential nutrients or calories.
- Explore the presence of any known allergies, including the way the allergy was determined and its manifestations in the child. This information should be utilized to determine whether any further evaluation or treatment is indicated.
- Explore previous medications that had been administered, including prescribed medications and non-prescript!on medications. Document any behavioral effects of the medications, in addition to the medical effects. This would be helpful to determine whether paradoxical effects on behavior have been observed.
- Thoroughly explore the possibility of developmental regression. Many children

with ASD have a period of apparently normal development, although with further detailed questioning, it may be clear that signs or symptoms of developmental abnormalities were previously present. It is important to specifically document which developmental skills were previously present and at what ages and to compare those skills to current function.

d. Review of Systems:

- Explore all relevant medical organ systems to determine whether signs or symptoms of underlying medical disorders may be present.
- Direct special attention to sleep, since many children with ASD have sleep disorders, which can interfere with child and family function.
- Obtain information about difficulties with falling asleep, night awakening. Specifically elicit signs of problems with hearing and vision. Many children with developmental disorders have impairments in hearing and vision; therefore, obtaining information about parent concerns, past evaluation of vision and hearing acuity (including the methods of testing, child compliance and testing results) and sensory hypersensitivities is important.
- Obtain information about the possible presence of diarrhea or constipation, since some children with ASD may have gastrointestinal problems.

3.2.3.2 Developmental and Behavioral History of the Child

The parent interview should include the developmental and behavioral histories and current functioning of the child. This information is gathered using either questionnaires or direct interviewing. In practice, a combination of both components is best. Questionnaires include objective, easily identifiable developmental information such as developmental milestones, motor skills, eating and sleeping patterns, etc. Other information provided through this format could include history of evalua-tions, past treatments and interventions, if appropriate. The clinician uses this information to supplement the parent interview. Collection of easily identifiable and verifiable information before the interview allows more time for the clinician to pursue current concerns and obtain detailed information pertaining to specific diagnostic criteria. The clinical content of the parent interview should document the following domains:

- First concerns about the child's development. This includes the parents' first concerns as well as concerns of others (relatives, PCP) that may have preceded parental concerns.lt also important to ascertain their interpreta-tion of the events at that time (i.e., family move, illness, daycare experience, etc.).

- Characteristics of the infant's temperament.
- Social-emotional milestones. This includes engagement in typical baby games (pat-a-cake, peek-a-boo), eye contact during feeding and games, shared attention, greetings and similar significant events. It is sometimes helpful to provide a reference point (i.e., first birthday) to aid with recall.
- Sensory abnormalities. It is important for the clinician to provide examples to help discriminate atypical patterns from typical developmental patterns. For example, arm flapping and jumping are common in many preverbal children. For example, children respond to exciting stimuli such as the currently popular children's characters, Barney and Elmo.
- Feeding and sleep problems or patterns.
- Fine and gross motor development and milestones.
- Atypical interests and activities.
- Interest in other children and/or siblings.
- Patterns of attachment to caregivers.
- Ability to use nonverbal communicative means such as gesture and facial expression.
- Communication, including both verbal and nonverbal intent.
- Preferred activities and play.
- Other notable characteristics such as loss of skills or deterioration of behavior.

3.2.3.3 Family Medical and Mental Health History

The focus of this portion of the interview is to ascertain the presence or absence of any medical, developmental or psychiatric disorders in the family history that may be related to the current concerns or assist in differential diagnosis. While many genetic conditions may have variable expression within members of the family, a knowledgeable clinician should determine which conditions might be relevant to the child's primary diagnoses or other concurrent medical conditions and require further information. Some conditions, such as tuberous sclerosis, are frequently due to a new genetic mutation, while other conditions, such as fragile X syndrome, may have variable expression in family members. Particular attention should be paid to other family members who have developmental disabilities or metabolic disorders or who died at an early age.

3.2.3.4 Medical Evaluation

The American Academy of Pediatrics (AAP) has made recommendations on the role of the pediatrician in the diagnosis and management of ASD (American Academy of Child and Adolescent Psychiatry, 1999). According to the AAP, the purpose of the medical evaluation for children with ASD is to assist with determining the etiology of the disorder, associated medical conditions and any other health conditions that may also be present. Determination of the etiology and associated medical condi-tions may have numerous important potential benefits, including genetic counseling, family counseling to help the family understand the cause of the disorder, possible treatment options, information about prognosis, potential for prevention (both primary and secondary) and facilitation of the development of a comprehensive database which can be used for epidemiological purposes. Over time, new information, including new clinical genetic syndromes, is expected to be available. It is therefore important for clinicians seeking expertise in ASD to stay involved with the care of children with ASD and to remain informed about current research results.

3.2.3.4.1-Components of a Medical Examination

There are two type of Medical Examination. These are: Physical and Neurodevelopment Examination and Developmental Neurological Examination.

3.2.3.4.1.a-Physical and Neurodevelopment Examination

A comprehensive physical examination including a neurodevelopment examination is an essential part of the- medical evaluation of children with ASD. It should be performed by a qualified health professional with expertise in the area of ASD.One purpose of the general physical examination is to evaluate the child for signs of genetic disorders and specific growth impairments such as microcephaly, macrocephaly or organomegaly; abnormalities of the sensory organs such as cataracts; and manifestations of neurocutaneous syndromes such as neurofibromatosis or tuberoussclerosis. Some examples of the more common disorders, which may be associated with ASD, or must be considered in the differential diagnoses of ASD, and their common manifestations, are as follows:

Fragile X Syndrome: Physical features present in young children with fragile X syndrome may include prominent ears (70 percent), high arched palate (63 percent), hyperextensible fingers (49 percent) and a long face (64 percent) (Hagerman, 1999). Features may be present in girls as well as boys, and may present in more subtle ways.

Fetal Alcohol Syndrome: To qualify for a diagnosis of fetal alcohol syn-drome (Institute of Medicine, 1996), there must be a confirmed history of maternal alcohol exposure during gestation, evidence of growth retardation, characteristic facial features and evidence of central nervous system neurodevelopment abnormalities. The growth impairment may be evidenced by low birth weight for gestational age, decreasing weight over time (not due to nutritional factors alone) or disproportional weight for height. The characteristic facial features include short palpebral fissures, thin upper lip and flattened philtrum. Children who do not meet these specific criteria may be considered for other diagnoses such as alcohol-related birth defects (which may be cardiac, renal, skeletal, ocular or auditory), or alcohol-related neurodevelopmental disorder.

Tuberous Sclerosis: Facial nodular lesions (fibrous angiomata) are present in 50 percent of children by the age of 5 years, and may include hypopigmented lesions in an "ash-leaf macular pattern in other areas of the skin. Teeth may show pit-shaped enamel defects. Hamartomas can develop in any organ, including cardiac, renal, gingival and subungual. Seizures frequently develop in infancy or early childhood.

Congenital Infections: Children who have developed symptomatic or asymptomatic congenital infections may later develop symptoms of ASD. Conditions such as congenital cytomegalovirus infections, for example, in young children can manifest, in addition to other medical problems, such physical findings as microcephaly, later onset hearing loss or hepatomegaly.

3.2.3.4.1.b-Developmental Neurological Examination

The purpose of the developmental neurological examination is to determine whether there is evidence of developmental neurological abnormalities, as corn-pared to the neurologic function expected of a child at a specific chronological age, which may be associated with other specific developmental disabilities, co-occur-ring conditions or warrant further neurological laboratory testing. The essential components of the examination are as follows:

- Head circumference
- Cranial nerve function
- Cerebellar function
- Deep tendon reflexes
- Postural responses
- Primitive reflexes

- Motor examination, including active and passive tone, strength,involuntary movement
- Tests of gross and fine motor coordination
- Presence of abnormal reflexes and signs, such as Babinski response

3.2.3.5- Laboratory Tests

Medical laboratory testing should be decided upon the basis of the clinical history and physical examination, including the family history. In particular, behaviors such as pica might lead to a decision to perform lead screening. In addition, evidence of growth impairment or failure to thrive might lead to further investigation of thyroid function, and history of cyclic vomiting or protein intolerance might suggest further metabolic screening including amino acid chromatography. Careful consideration should be given to a history of developmental regression, especially if family history or neurological examination provides indication for further testing.

3.2.3.6 Genetic Testing and Consultation

It was the opinion of the Guidelines advisory panel that routine laboratory testing, at a minimum, should include performing a high-resolution karyotype and fragile X probe (DNA probe for FMR-1 gene). This will enable the clinician to determine if major chromosomal disorders are present, but not eliminate the possibility of non-chromosomal genetic disorders. For that reason, the medical clinician should determine whether further consultation with a geneticist is indicated or whether further testing should be undertaken to delineate the etiology of mental retardation, if present. An experienced medical clinician should decide further laboratory testing as appropriate and as further research demonstrates the utility of such measures as FISH testing for chromosome 15q abnormalities. The clinician should also consider whether the clinical presentation could be consistent with Rett's disorder, for which a specific genetic test is now available (MECP 2). Since other chromosomal abnormalities have been associated with ASD as well (including 7q abnormalities) in a small number of cases, the benefits of further laboratory investigation should be evaluated, and discussed with the family. The importance of genetic testing cannot be overemphasized, since families with a child with ASD have an increased risk of having further children with ASD. The overall risk is considered to be 6 percent, but can be considerably higher (or lower) if a known genetic etiology is determined. This etiology can have implications for genetic risk of ASD for other family members as well. As further research is completed, more specific tests, more specific genetic information for families and more specific treatments for

ASD depending upon the etiology may be available.

3.2.3.7-NeurologicaI Laboratory Evaluation

Other non-routine tests, which should be considered on an individual basis, include an EEG if there is a history consistent with seizures, documented developmental regression of language or behavior (beyond that consistent with ASD presentation) or clinical neurological abnormalities. A cranial MRI or CAT scan should be considered if clinical neurological abnormalities are present, such as microcephaly, neurological asymmetries or rapidly increasing head circumference. Isolated macrocephaly is not generally an indication for neuro imaging. Special studies, such as a sleep or video EEG may be indicated if the clinician suspects Landau Kleffner syndrome (acquired epileptic aphasia), where subclinical seizure activity leads to a progressive loss of receptive and expressive language. Further laboratory studies, such as urine organic acids, may be appropriate if a degenerative neurological disorder is suspected.

3.2.3.8 Other Laboratory Investigations

Other tests, such as allergy testing, trace mineral analysis and immunological investigations should be considered only if clinically indicated based upon the presence of clinical history or additional symptoms or signs. Unless clinically indicated, intrusive neurological testing should not be the routine course of referral before evaluation with a specialist in ASD.

3.2.3.9-Sensory Evaluation

Vision	Hearing
Questions or observations about the child's functional vision should be asked during the diagnostic process. Since strabismus, hyperopia and myopia are common in children with developmental disabilities, the evaluation of visual function is an important part of the medical evaluation. As part of the physical examination, the clinician should perform an eye examination, documenting the extra-ocular movements and pupillary responses as well	All children suspected of ASD should have their hearing screened using appropriate methodology and should be referred for a formal hearing assessment if concerns are present. The child should be referred to a pediatric audiologist as part of the diagnostic work-up if hearing screening cannot be performed or if the child fails hearing screening. Since some children with ASD have difficulties with compliance and cooperation with these

Vision	Hearing
as the eye morphology. In addition, the child's vision should be screened using acceptable methods for infants, toddlers and preschoolers. This may be functional vision screening or use of other standardized methods. If there are concerns from the parent or diagnosticians, a referral to a pediatric ophthalmologist or optometrist should follow during the assessment for intervention planning phase. The procedures used should correspond to the professional standards of the field.	procedures, it may be necessary to sedate the child to perform auditory brainstem evoked potentials. Newborn screening tests are insufficient for assuring adequate hearing as some children may have hearing impairment due to injury or illness (such as repeated ear infections) in the infancy or toddler years, which was not present at birth.

3.2.3.10-Direct Behavior Observation

Direct observation of the child's behavior is essential to a diagnostic evaluation for several reasons. First, it allows the clinician opportunities to directly observe the child in unstructured situations. After a period of adjustment, children often display typical play behaviors (or lack of) and other behavior anomalies that may be have concern. Observations can also clarify issues that may come up during the parent interview by helping to elicit observation that is more explicit or ascertaining whether such behavior is typical. With direct observation, situations can be structured or created to clarify these issues (e.g., by a parent or clinician saying "look" to draw attention to an interesting toy, understanding of the gesture can be assessed). Observation can add additional data to parent report. Parents have the utmost knowledge of their child and, often, the highest degree of adaptation to their child's pattern of communication and behavior. They may not realize how they unknowingly compensate for subtle child deficits (e.g., by standing in front of or close to the child when calling his/her name, thus ensuring eye contact). Finally, observations allow the clinician to observe patterns of interaction with family and unfamiliar adults. This is not essential, but should be accommodated if appropriate.

Direct Observation Assessment Checklist: Autism Spectrum Disorders

Child's Name.....Date of Assessment.....

Interviewer/Observer.....Informant.....

1	2	3	4	5
Domains	**Behaviors**	**Observed**	**Reported**	**Not Observed Don't know**
Social Competence	marked impairment in moverbals/gestures			
	Little joint attention/ sharing of interests			
	Rarely initiates social interactions			
	Rarely shows appropriate imitation			
	Shows poor social reciprocity			
	does not enjoy social games (e.g., peek-a-boo)			
	Few appropriate peer relationships			
	Little interest in other children			
	Trouble establishing/ maintaining eve contact			
	will not look to an object pointed at			
Communication	Echolalia (repetitive/ nonfunctional speech)			
	delayed /absent spoken language			
	does not point to indicate interest or desire			
	Little response to			
	1 anguagt /appears deaf			
	Shows little communicative intent			
	Inability to initiate or sustain conversation			
	no varied make-believe/social imitative play			
	oddities in volume/ cadence/ pitch			

1	2	3	4	5
Domains	**Behaviors**	**Observed**	**Reported**	**Not Observed Don't know**
	Failure to generalize word meanings			
	Pronoun reversal/ misuse			
	rarely asks "wh" questions			
Behavior Patterns	Interest in parts of objects (e.g., wheels)			
	Inappropriate ust of objects			
	Rigid adherence to routine/ ritual/social rules			
	negative reaction to change/ transition			
	preoccupation with topics / details / pat terns			
	stereotypic movements			
	unusual interest in sensory stimuli			
	unusual avoidance of sensory stimuli			
Environment	demands too high			
(Circle location below)	overwhelming stimuli			
Home/ School/ Clinic	no direct teaching of social interactions			
	need for more positive teaching interactions			
	need help identifying additional reinforcers			
	Inconsistency across people/ settings			

1	2	3	4	5
Domains	**Behaviors**	**Observed**	**Reported**	**Not Observed Don't know**
	weak collaboration			
Cognitive/ Development	atypical developmental rates or sequence			
	poor abstract thinking/			
	over selectivity			
	delayed intellectual development			
	Difficulty taking another's perspective			
Physical/ Motor	Gross motor clumsiness			
	Fine motor clumsiness			
	toe walking			
Play/Leisure	Poor imagi native/symbolic/ pretend play			
	Inappropriate toy play			
Academic skills	Poor application of facts			
	Can't work independently			
	Trouble following tasks in sequence			
Self-help	Trouble dressing			
	Trouble feeding			
	Trouble toileting			
	Unusual/ difficult sleep patterns			
	Dangerous/ unsafe behaviors			

1	2	3	4	5
Domains	**Behaviors**	**Observed**	**Reported**	**Not Observed Don't know**
General/	Trouble following directions			
Vocational	Trouble working independently			
	Excessive tantrums			
	Physical aggression			
	Trouble following simple rules			
	Self injurious behavior			

3.2.3.11 Play Environment

Available toys should be geared towards a range of developmental levels (i.e., sensory, functional, symbolic, etc.) due to the wide variability in functioning levels of these children. Materials should also be age and gender appropriate. Again, information provided before the evaluation can help guide in material selection so that children are neither overwhelmed nor under challenged. Gearing toys and materials as closely as possible to the child's functioning and interest levels will lead to a greater likelihood of observing representative behaviors and typical play for that child.

3.2.3.12 Degree of Structure

Observations should include structured and unstructured observations of the child. Structured observations allow the clinician to press for specific behaviors common to children with ASD. They also allow for more standardized documentation of symptoms and behaviors to the extent that the observation measure provides psychometric data. This allows for documenting behavior in comparison to similar children as well as more easily tracking intervention response in the future. However, structured observations may inhibit more typical child behavior due to noncompliance, unfamiliarity with materials and difficulty with changes in activity and interactive partners.

Unstructured observations of child behavior often provide the clinician with a more representative sample of the child's typical behaviors and use of play materials in the absence of specific adult demands or intrusions. For the purposes of establishing functioning levels, unstructured observations provide information regarding behavior that is typically displayed rather than that which is evidenced in response to specific environmental press.

3.2.3.13 Observation Domains

A naturalistic setting should be arranged so that the child is able to engage with the environment and others as comfortable as possible. Specific behaviors to be observed include:

- Turn-taking
- Shared attention
- Social reciprocity
- Pretend play
- Sustained interaction
- Spontaneous giving/showing
- Imitation of novel acts
- Ability to have examiner direct attention
- Use of toys and objects

3.2.3.14-Cognitive Assessment

Initial descriptions of children with ASD (Kanner, 1943) suggested that general intellectual functioning was not affected and that these children often possessed superior intelligence. This was often due to the presence of highly specific or "splinter" skills often demonstrated (e.g., counting, memorization). Since that time, it has been repeatedly established that children with ASD vary widely in their cognitive potential. Among children who demonstrate normal or superior nonverbal skills, a significant proportion demonstrates verbal and/or adaptive skills in the impaired range of functioning. It is now recognized that assessment of cognitive functioning is crucial to the differentiation of ASD from other disabilities. Cognitive ability also has an important role in prognosis and intervention planning. An estimation of potential is necessary for the following reasons:

- Functioning level, which includes cognitive and adaptive evaluation, is important for differential diagnosis and intervention planning. A diagnosis of ASD is appropriate when a child shows communicative, social or interest deficits that are inconsistent with overall cognitive functioning. For example, a child of 4 who is functioning at a 12-month developmental level would not receive a diagnosis of ASD if he or she displayed communicative and play behaviors similar to that of other 12-month-old children. It is

also extremely difficult to document significant social and communicative deficits below this age level.

- Treatment research generally has supported the notion that response to various treatment approaches has some relation to overall cognitive functioning. For example, certain intensive behavioral approaches have been shown to be less successful with children at lower cognitive levels who are unlikely to develop spoken language.

- Degree of cognitive functioning may indicate expected rates of progress. This, of course, is dependent upon the relative degree of certainty with which cognitive impairment can be established.

3.3 ❐ Instructional Approaches

Structure

3.3 Instructional Approaches

This chapter provides brief information of instructional approaches for young children with autistic spectrum disorders. In this chapter discuss the principle of instructional approaches and six representative comprehensive programs of instructional approaches. The principles are:

3.3.1 Principe

- Determine the most efficient and effective program for the child. And it's based on current research and effective practices.
- Is provided by appropriately trained and competent personnel including parents as appropriate. Make sure staff have specialized training and certification or licensure.
- Is reflective of the child's areas of strengths and needs that drive the curriculum. Allow the program to integrate techniques or strategies designed to address an array of the child's needs.
- Includes a variety of methodologies and approaches, which can be integrated. Use strategies that are most cost effective.
- Is based on comprehensive assessment results. Ensure that programming addresses aspects of ASD and have social validity.

- Is determined by an IEP team that is multidisciplinary and includes the parent. Ensure that the program is efficient, consistent, and compatible among providers and settings.
- Program should be outcome-based and evaluation program must be the effectiveness of the child. Make sure the services allow for individualization, and can be validated for the specific child.
- Provide ongoing evaluation of programming and intervention outcomes via performance based assessment and observational data. Have standards for mastery of goals and objectives.

3.3.2 Instructional Approaches

There are six representatives comprehensive programs of instructional approaches are:

1. **Developmental Approach**
2. **Applied Behaviour Analysis (ABA)**
3. **Structured Teaching**
4. **Psychotherapies**
5. **Sensorimotor Therapy**
6. **Play**

3.3.2.1 Developmental Approach

- A good way to begin thinking about children with ASD is to consider their developmental levels in much the same way you would for any typically developing child. Developmentally appropriate practices are the most important considerations in programming for younger children with ASD and functional skills become more of a focus for older students. Professionals and support personnel working with students with ASD should look for variations in developmental sequences across, and within, skill areas.
- It is important to recognize in abilities i.e. some skill areas more strongly developed than others and to examine the deficits in developmental skill areas i.e., mastering some age- or higher-level skills while not consistently performing lower level or more basic skills. Children with ASD have learning profiles should be require specific educational approaches to meet their individual needs.

- Treatment methodology derived from the developmental approach provides a "blueprint" from which to select sequential skill objectives, according to the individual's unique profile of learning strengths and weaknesses. The Developmental Approach particularly lends itself to programming for social relationships and affective behaviours. Specific goals could involve establishing the developmental sequence of social and emotional skills.

3.3.2.2 Applied Behaviour Analysis (ABA)

The ABA principles, with their emphasis on highly structured and sequenced teaching strategies, and systematic, data-based evaluation methods, are especially suited to the goal of effective instruction for students with ASD. Intervention programming that employs an ABA approach attempts to

- Understand skill and behaviour strengths and deficits.
- To structure the learning environment.
- Systematically teach discrete, observable steps that define a skill.
- Teach generalization and maintenance of newly learned skills.

There are ten application system should be applicable in Applied Behaviour Analysis (ABA).These are:

i. What does effective ABA include?

ABA includes direct teaching within a formal systematic framework. It is based on principles of learning derived from laboratory work that is data based and includes differential reinforcement, task analysis, and continuous monitoring of performance.

The purpose of the ABA approach is to increase or decrease a given behaviour, depending on the goal. These techniques are useful for addressing behavioural difficulties (e.g., decreasing hitting others and increasing the individual's ability to follow a predictable visual schedule), as well as skill deficits (e.g., increasing length of sustained eye contact).

ii. What strategies are associated with ABA?

- Prompting
- Shaping
- Fading

- Chaining
- Modeling

iii. What are types of prompts used in ABA?

- Verbal/vocal
- Modeling/demonstration
- Visual
- Positional
- Physical
- Expectant waiting

iv. What is shaping in ABA?

Shaping begins with any approximation of the response and reinforces small increments or steps toward acquisition of the target behaviour. Increments are called "successive" approximation. Guidelines for shaping include clearly defined goals, observation in a natural setting to set the start point, clear steps that are either too large or too small, and fading prompts to set the stage for the next step.

v. What is meant by chaining?

Chaining may be backward by beginning with the final link and proceeding in reverse. It may also be forward by beginning, teaching the first link in the chain, and guiding the child ihrough the rest of me steps.

vi. How is modeling done?

Modeling may be verbal or nonverbal individual actions or a sequence of actions, actual or pictorial or multi-person.

vii. What is involved in Task Analysis?

- Decide what skill you wish to teach
- Break the skill into component parts
- Decide if components are sequential or simultaneous
- Map out how you will teach the skills

viii. What kinds of feedback should be used?

- Positive reinforcement increases the likelihood of behaviour

- Negative reinforcement increases the likelihood of behaviour
- Punishment decreases the likelihood of a behaviour

ix. What reinforces work?

- Primary rein forcers include food and sensory or compulsive drive
- Secondary reinforces include praise, social routines, intense interests, and need for closure

x. What are the features of Discrete Trial Training?

- Discriminative stimuli
- Task analysis
- Every trial has a clear beginning and end
- Each trial is identical
- Instruction is repetitive
- Cue are exaggerated
- Each trial has 4 parts: presentation of instruction, child response, consequences and a short pause.

It is important to realize that "Applied Behaviour Analysis (ABA)" is a broad approach for facilitating behaviour change and this specific training method is referred to as "Discrete Trial Training (DTT)" and can be effective when applied to a particular skills and behaviour.

3.3.2.3 Structured Teaching

Structured teaching is a way to develop teaching strategies and to change the environment to make the world more meaningful for children with special needs. These structures can be utilized at all developmental levels and do not limit the curriculum. They are simply a component of the curriculum.

Reasons for using structured teaching

Use the child's visual strengths to help him focus on the relevant information in his environment

- Adapts the environment to make it more orderly and predictable
- Incorporates routines and makes things more familiar
- Emphasizes "finished" and teaches the concept of "finished"

- Focuses on the development of independent skills

Students with autism benefit from:

- **Physical structures**

➢ Clear physical and visual boundaries

➢ Minimal visual and auditory distractions

➢ Identified teaching areas including snack, play, transition and work areas

- **Daily schedule**

➢ Daily schedules visually tell the student in a way that he can understand what activities will occur and in what sequence.

➢ Each student should have a way to indicate when an activity is finished on the schedule.

- **Individual work systems**

➢ A systematic way for the student to receive and understand information

➢ A meaningful routine that answers these questions for the student

What work? How much work?

When is it finished? What happens next?

- **Visual structures**

➢ Teach the student to look for the visual instructions that give meaning to the task

➢ Shows student what to do with materials

➢ Includes both visual instructions and visual organizations

3.3.2.4 Psychotherapies

- Mental health providers can play a valuable role in a comprehensive program for a student with ASD. For example, mental health professionals within the schools, communities and medical facilities should provide support for families, particularly for families whose child has recently received a diagnosis of ASD.
- Mental health providers can also consult with teachers, facilitate social skills groups for students, and assist with in-service training for school faculty and community personnel. Although it has been well-documented in individualized psychotherapy (e.g., "talk therapy") is not particularly effective with children with ASD, therapeutic

strategies can certainly be geared toward behavioural change and skill-building.

3.3.2.5 Sensorimotor Therapies

Sensory integration theory has provided valuable information about how individuals with ASD process and respond to incoming sensory stimulation. There is now clear evidence that sensory integration difficulties can significantly influence an individual's behavioral functioning, and that activities which address sensory deficits or excesses can assist students with ASD in developing independent functioning. For example, inclusion of stimulatory and regulatory activities such as rhythmic rocking, sequential body pressure and joint compression input, swinging, jumping, moving to music, and swimming may be beneficial strategies for encouraging attention to task and calming children.

3.3.2.6-Play

Play activities have long been included in interventions for children with various psychological and medical disorders. The literature on educational practices has documented the role of play activities as an effective tool for teaching children diagnosed with ASD. The TEACCH program, for example, has acknowledged that typical play behaviors are very difficult for many children with ASD to learn independently or vicariously. However, structured teaching of play activities fits with the adage "play is work, and work is play" for children with ASD.

Play should be used to teach appropriate manipulation of a variety of play and leisure items. Play activities can gradually increase the child's tolerance for playing alongside and cooperatively with others. These play activities can be conducted in individualized instructional settings, and through small play groups. Play training can also be instrumental in facilitating social, language, and cognitive development in non-threatening and natural environments.

Development of individual play goals, and even a play group, for children diagnosed with an ASD should involve consideration of each child's level of functioning, and unique needs. The group activities should be carefully planned with specific target goals and structured to provide each child with the opportunity to develop or enhance new skills.

NOTE: Traditional, psychoanalytically oriented play therapy geared to help the child develop more effective coping strategies, is not an effective strategy for children with autism.

3.4 ❐ Teaching method in Autism

3.4 Teaching method in Autism

There are various kinds of teaching methods for children with ASD. At first the T.T. assesses the problem area of his client and then he applied the necessary teaching method properly.

(a) ABA : The full name is Applied, Behaviour Analysis, based on Skinner's Operant Conditioning. According to this positive reinforcement helps to increase positive behaviour. It is applied either in school or home or in play ground also to increase the skills 'of eye contact, listening, imitating, reading, conversing, understanding other's mind.

(i) Assessment and (ii) Intervention are the two steps of ABA. In Assessment the Behaviour analyst assesses his clients ability, inability, like-dislike from various domains. Then, which skill he wants to teach, at first divides the skill in some

small -parts and teaches every stpes easy to complex. After the implementation the teacher meausres his Clint's development and starts re-assessment if necessary.

There are some teachniquesa to conduct ABA—Shaping, Modeling, Prompting, Enhancing, Time Out, Extraction.—

'Differential reinforcement' and 'Punishment' are two essential techniques for management problem behaviour. __

(6) **Curriculum** based Assessment : Assessment of skills based an the curriculum. It is useful for the children with special needs in a regular class.

(e) **Montessory** Method : In this method the children get most priorit than the teaching style and environment. Here the development of a child's sensation is more essential to teach his something. Didactic Apparatus like blocks, dolls, wooden steps, playing object at variable shapes and sizes, bells, picture are used as teaching material. To use these materials the students gradually can. iearn reading, writing and counting. Teachers must be affection to the students.

3.4.1 Teaching Tips for Children with Autism

- Use visuals
- Avoid long strings of verbal instruction
- Encourage development of child's special talents
- Use child's fixations to motivate school work
- Use concrete, visual methods to teach number concepts
- Let child use a typewriter instead of writing
- Protect child from sounds that hurt his/her ears
- Place child near a window and avoid using fluorescent lights
- Use weighted vests to calm nervous system
- Interact with child while he/she is swinging or rolled in a mat
- Don't ask child to look and listen at the same time
- Teach with tactile learning materials (e.g., sandpaper alphabet)
- Use printed words and pictures on a flashcard
- Generalize teaching

3.4.2 Parenting a Child with a Disability

- Seek the assistance of other parents
- Rely on positive resources in your life (e.g., counselors, Special Educator, Speech therapist and occupational therapist.
- Take it one day at a time
- Learn the terminology
- Seek information (e.g., internet, support groups, library)
- Do not be intimidated
- Maintain a positive outlook
- Find programs for your child
- Take care of yourself
- Decide how to deal with others
- Keep daily routines as normal as possible
- Know that you are not alone
- Most importantly, keep your sense of humor

3.4.3 Quality Program Indicators

The importance of teaching method programs for children with autism spectrum disorders and the importance of family involvement in that educational programs. Programs will differ from child to child because of the uniqueness of autism spectrum disorders and the range of potential symptoms involved. There is consensus among researchers, practitioners, and educators that appropriate intervention begins early, usually by thirty months. Furthermore, researchers and professionals have identified a number of strategies that are essential to implementing an effective program.

The following are suggested components or indicators to be considered in developing and maintaining a quality educational program for children with ASD.

1. **Comprehensive team approach involving the family**
2. **Comprehensive assessment of skills and deficits**
3. **Clearly defined goals addressing the characteristics of autism spectrum disorder**

4. **Structure the environment**
5. **Effective teaching strategies**
6. **Applying functional behaviour assessment to problem behaviour**
7. **Assessment of the intervention (data collection)**
8. **Transition planning**
9. **Opportunities with peers**

3.4.3.1 Comprehensive Team Approach Involving the Family

Autism spectrum disorders are characterized by deficits in communication, behaviour, and social skills. Consequently, an effective program for students with ASD requires the expertise and input of family members and staff from multiple disciplines trained to understand the implications of autism spectrum disorders. A comprehensive team approach includes the child's parents and, as appropriate, related services personnel such as speech-language pathologists, psychologists, and/or occupational therapists to address the child's social, behaviour, language and motor skills as determined by the evaluation results. Furthermore, a comprehensive team includes special and general education teachers and/or para educators to ensure progress in meeting the individualized educational goals of each student. Working together, a comprehensive team assists in establishing and maintaining consistency of teaching and intervention techniques across individuals, lessons, and settings, increasing the potential for students with ASD to acquire, maintain, and generalize new skills and abilities. Comprehensive Team Approach are:

- Parents are active members of the educational team, contributing to decision-making, training issues, and follow-up provisions.
- All team members work together to assist in establishing and maintaining consistent interventions.
- Sufficient classroom support allows the student to demonstrate progress in meeting the individualized educational goals, objectives, and outcomes.
- Related services personnel, such as speech-language pathologists, psychologists, and occupational therapists address social, behaviour, language and motor skills as identified by evaluation results.
- Goals are consistently generalized throughout the educational program.
- Professional and parents discuss how often and in what format ongoing

communication can best take place.

- Problems are discussed as soon as they arise and before they get out of control.
- Teachers involve the parents in problem solving.
- Parents are not afraid to ask questions about any aspect of their child's program.

3.4.3.2 Comprehensive Assessment of Skills and Deficits

A comprehensive assessment of a student's skills and abilities. Assessments may differ because of each student's age and ability level. However, it is essential to consider the characteristics of autism spectrum disorders in completing each assessment. Thus, assessment may include are:

- Pre-academic and academic skills
- Pre-vocational and vocational skills
- Self-help and adaptive skills
- Communication
- Socialization
- Sensory regulation
- Motivation and reinforcement
- Behaviour
- Fine and gross motor
- Leisure activities
- Cognition

3.4.3.3 Clearly Defined Goals

The key to teaching new skills, or improving emerging skills, is creating clearly defined of IEP goals that are developmentally appropriate, functional, and based on the assessment results, student's strengths and interests, and individual characteristics of autism spectrum disorders. The IEP process and procedures for eligible special education student's vital role of parents in the development and implementation. So number of factors must be considered in developing individualized goals for students with ASD. Although individual goals will vary for each child based on their age, diagnostic characteristics and ability level, research has revealed that attention paid to the areas

below may increase the child's ability to benefit from the educational experience. Based on the-results of the child's evaluation, goals may be written in one or more of the following areas:

- **Attention** (awareness of others, objects, or activities) - Attention goals may focus on sustained attention; joint attention; and shitting attention from event to event, object to object, object to person, and person to object.
- **Imitation** - Imitation is an essential prerequisite skill in learning from others. Imitation goals may include imitation with objects, motor actions, oral motor actions, vocalizations, verbalizations, gestures, academic tasks, and social skills.
- **Communication** - Communication goals may focus on expressive and/or receptive language and include verbal or augmented communication skills, social-communication skills, and the use of functional communication systems to provide alternatives to challenging behaviours.
- **Social development** - Social development is a core deficit area for individuals on the autism spectrum. Goals in this area may include body language, manners, conversation skills, friendship management, cooperative play skills, self-regulation, empathy, and conflict management, among others.
- **Play** - Developmentally appropriate and functional play skills can be targeted as an avenue to increase social skills with peers.
- **Cognitive development** - Cognitive goals may include a focus on conceptual development, problem-solving, academic performance, and executive functions (i.e. flexible, strategic plan of action to solve a problem or attain a future goal).
- **Challenging behaviours** - The function of challenging behaviours are identified and appropriate alternative behaviours are taught using positive behaviour supports.
- **Sensory and motor development** - Individual differences in motor and sensory functioning are identified and planned for, including tactile/touch, visual, smell, sound, and taste; environmental stressors are identified and modified.
- **Adaptive behaviour** -Essential life skills, including hygiene, self-help and safety are considered and planned for in order to enhance personal independence and create opportunities for greater community participation, including independent living, working and recreating.

- **Recreation/Leisure/Physical Education** - Recreation skills are important goals as they enhance cognitive, social and motor skills enhance relationships between self and environment; shape appropriate use of unstructured time; increase opportunities to get physical exercise and stay healthy; and increase enjoyment of life.

In writing clearly defined outcomes of IEP team should consider the following:

- Have meaningful IEP goals been identified for the child/student?
- Were family members involved in identifying goals to be addressed at home and school?
- Are the outcomes developmentally significant and appropriate for the child/student?
- Have the characteristics of the autism spectrum disorder been considered?
- Do the goals promote educational gain?
- Do the goals allow for the learned skills to be used in other settings (home, community) and with a variety of people?

3.4.3.4-: Structure the Environment

Students with autism spectrum disorders are especially sensitive to changes in the environment or routine. Although the level of structure needed for each student will vary based on their age, diagnostic characteristics, and ability level, research has revealed that effective educational programs for students with autism spectrum disorders have structured environments which include:

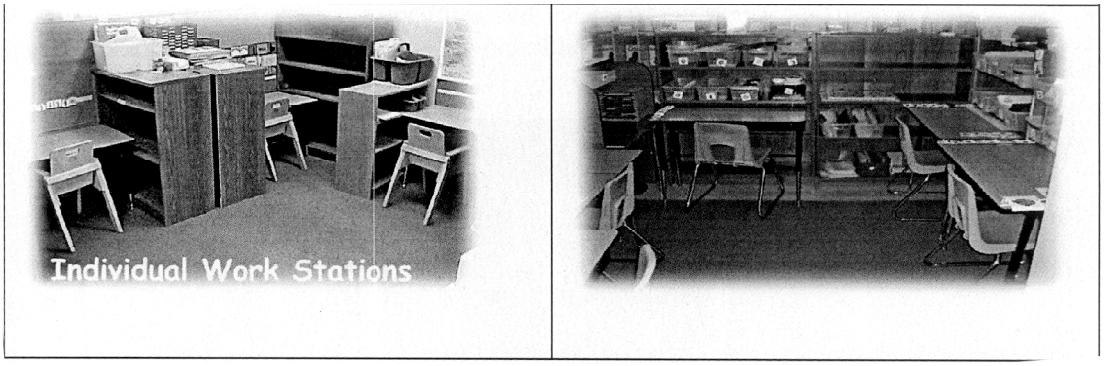
- **Physical Structure**
- **Routines**
- **Visual Supports**
- **Activity schedules**

<u>Physical Structure</u>

Physical structure refers to the way each area in the classroom or school is set up and organized. To the student with ASD who may perceive the world differently or has unique sensory impairments, the school or classroom can be a confusing and overwhelming place. Therefore, the classroom should be set up and organized with clear physical and visual boundaries. Boundaries such as carpets, bookcases, dividers, or study carrels are frames that visually identify an area, helping the student to understand

where different activities take place and materials are stored. Two examples of work stations can be seen in Figures la and Ib. Consider providing a specific location for quiet activities and individual work activities. Once the various locations and boundaries are identified, signs, symbols, schedules, and choice boards can provide visual information on the rules and expectations of each area. Additionally, when planning the physical structure of the classroom, it is important to consider and decrease visual and auditory distractions, such as bright lights and noises, e.g., bells, children's loud voices, chairs scraping on the floor, and the humming of overhead projectors, lights, or computers.

Example of Individual Work Stations



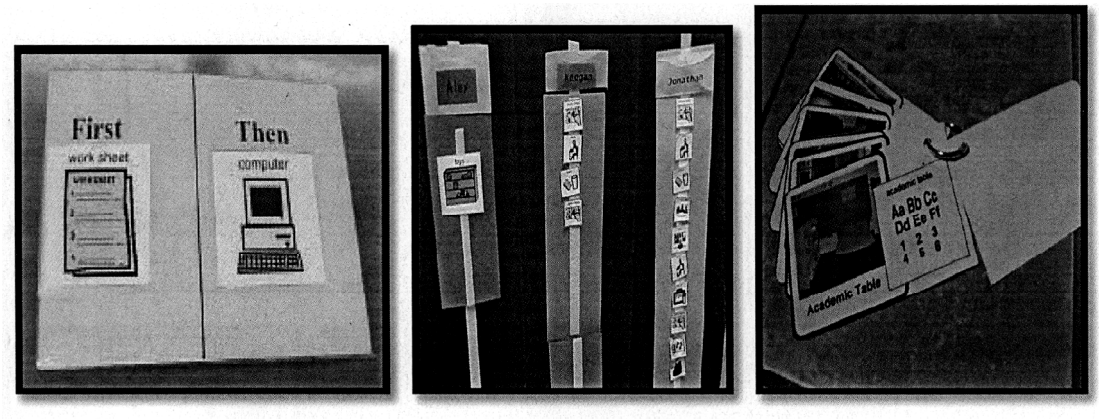
Routines

- Students with ASD are more socially responsive and attentive to learning in the classroom, when information is presented in a highly predictable and routine manner.
- They can also become easily overwhelmed at even minor changes in their daily schedule or routine.
- To build independent work skills and to create a comfortable environment in which the student is ready to learn, develop and teach within routines. For example, a routine for independent seatwork may be as simple as "first we work", and "then we take a break".
- A routine for large group instruction might be, first, the teacher lectures; second, the students do group practice problems, followed by independent seatwork; and, third, take a break.

- Routines are also effective in teaching functional, leisure, and vocational skills.
- Routines can become problematic if the student begins to demonstrate an obsession for sameness that results in negative behaviours when change occurs. To decrease the stress, plan and prepare the student for potential changes in the routine by utilizing transition strategies, role playing, and visual supports systems.

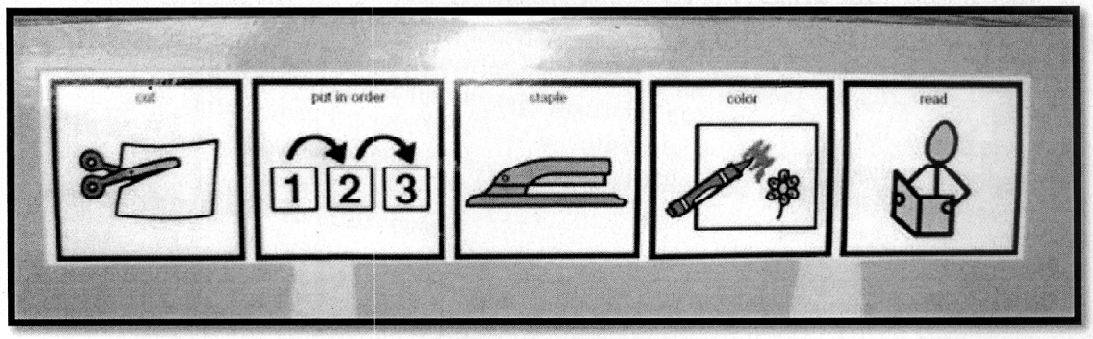
Visual Supports

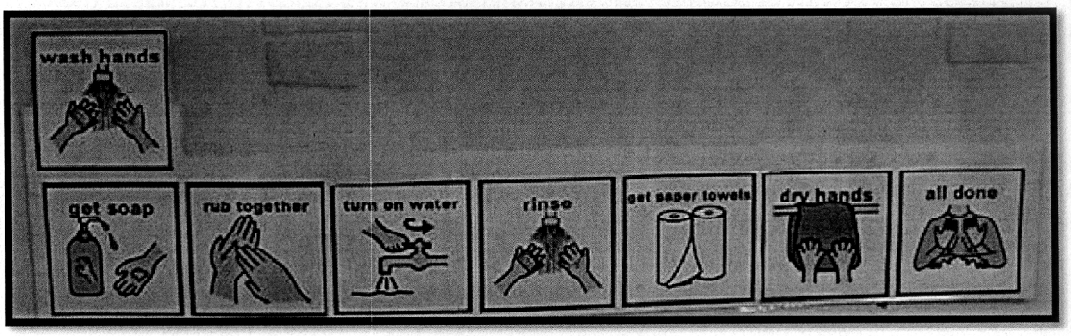
Below the figure shows an example of a visual support for routines. Students with autism spectrum disorders have strong visual skills. Visual organization of instruction and materials allows the student to utilize these visual learning strengths. Examples of helpful visual supports may include the use of activity schedules and calendars, posted rules, choice boards, and other organizational methods as appropriate for individual students.

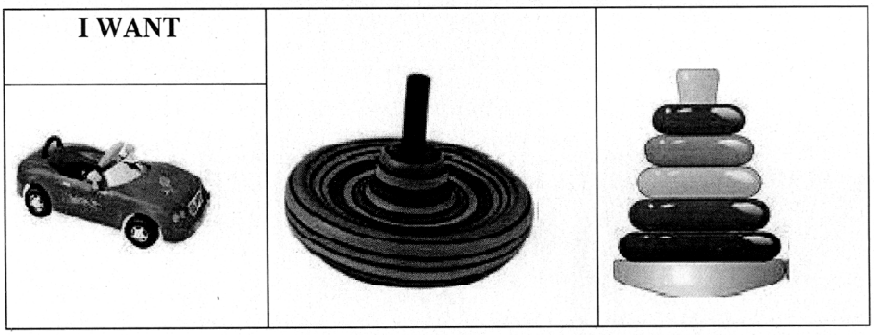


Activity schedules are a set of pictures or words that cue a student to participate in an activity. Depending on the student's age and ability level, an activity schedule may be a three ring binder with only one activity on each page, it may be a partial or full day picture schedule, or it may be as complex as a day timer or personal digital assistant (PDA). Mini-schedules are a set of pictures or words that cue children to the individual steps involved in a complex task.

Activity schedules





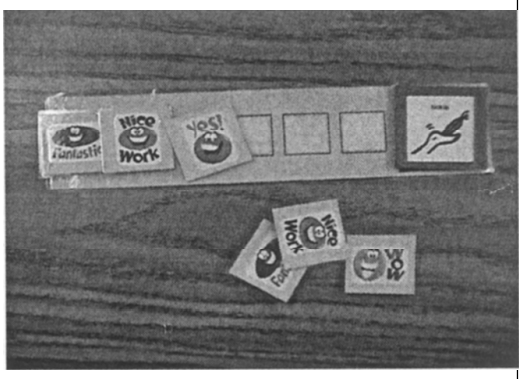


3.4.3.5 Effective Teaching Strategies

In addition to the use of structure, visual supports and routine, programs that result in educational progress for students with autism spectrum disorders also utilize motivational strategies and teach skills in a highly structured method either in a one-to-one or small group format, with minimal distraction, attention to specific details of the skill, and a focus on consistency, repetition, and predictability relative to the individual needs of the child. This section addresses such strategies and provides practical, low-tech suggestions for teaching students with ASD. When choosing an intervention or teaching

strategy remember that no single approach is likely to be right for every child; rather, teachers may need to utilize a wide variety of teaching strategies for their students with ASD. So varieties of teaching strategies for their students with ASD are:

a. Motivation and Reinforcement

Social activity	**Tangible/Edible:**	**Token System**
Take a break Play a game Use the computer Spend time with a preferred person	Healthy snack or beverage Small toy Bubbles Baseball/trading cards, videogames	A token economy is a system in which an individual earns tokens for targeted behaviours. Once the student has collected a predetermined number of tokens he can trade them for an item or activity that he desires. Examples of tokens include: • Points • Play money • Gold stars • Stickers • Tickets, coupons • Poker chips  Example Token System

b. Teaching Strategies

- **Discrete Trial** is a structured teaching strategy, used to teach tasks or lessons that have been broken down into their simplest teachable components. It consists of four components: **the instruction, the child's response, a consequence, and a brief pause.**
- **Pivotal Response Training** utilizes the discrete trial paradigm in lessons that are child directed. It also encourages teachers to create lesson plans and to work within the student's preferred activities.

- **Shaping,** which is the reinforcement of successive approximations of the target behaviour, is helpful when the student does not initially have the desired skill in her repertoire.
- **Prompting** provides students with extra help to achieve the desired response. Strategies may include verbal prompts, modelling, physical or gesture prompts, and the use of positional cues. Prompts can be used at the same time as instruction, during the student's response to help decrease errors, or after the student's incorrect response to demonstrate the correct answer. Although prompting strategies can be helpful in teaching new skills.

c Academic Strategies

Most students with autism spectrum disorders require some sort of academic modifications. Modifications are diverse and range from altering the way in which materials are presented to modifying how children indicate competence of academic concepts. **Graphic organizers, handwriting modifications, priming and assignment and test taking modification** are useful strategies to consider for students with autism spectrum disorders.

- **Graphic organizers,** such as semantic maps, Venn diagrams, outlines, and charts help children with autism spectrum disorders organize and visually represent important concepts.
- **Handwriting modifications,** for children with fine motor difficulties, may involve responding orally, keyboarding, answering questions in true/false format, transcribing into tape or digital format, or using a scribe.
- **Priming** refers to the process of preparing the student for an activity in advance of its completion. Previewing an upcoming activity helps to decrease the stress associated with change and the unknown. Some examples of priming may include reviewing an upcoming worksheet or activity; or going over an outline of what will be covered in the next section of a class, the next day, or in the next hour. Priming typically occurs close to the activity and can occur at home or in school.
- **Assignment and** test **taking modifications** should match each student's specific need. Some examples of modifications include: additional time, advanced practice/ priming, having the assignment /test read aloud, reduced number of items, a sample problem example, multiple choice versus essay format, keyboard versus handwritten.

d. Communication Strategies

- The communication abilities of students with autism spectrum disorders vary greatly, from students who are pre- or nonverbal to students with amazing expressive vocabularies, and from students who have very limited receptive abilities to those who can understand complex conversations and instructions.
- For preverbal and nonverbal students with autism spectrum disorders, a communication program may focus on teaching the student to communicate through gestures, speech and/or an augmentative or alternative communication system. Alternative and augmentative communication systems such as sign language, visual symbol systems, communication boards, and voice output devices can provide an effective format for allowing students to communicate their wants and needs in any setting.
- Augmentative and alternative communication are most effective when implemented early to ensure a method interaction and a system for teaching functional communication skills such as making requests, asking for help, protesting, and making choices. Early systems should be very functional and concrete. A typical progression for a visual-symbol communication system might be to move from a concrete to more abstract system. For example, starting with objects or actual photographs, moving next to colour photos and line drawings, and finally to printed words.
- Teaching ASD student to communicate through gestures, speech, or an augmentative or alternative communication system, new skills should generally be introduced in quiet, no distracting environments, with generalization occurring in more natural contexts where natural cues and reinforcements are available to make the skills meaningful and spontaneous.
- Utilize student interests to help motivate the child to initiate and use the communication system. For example, if a student has a favourite toy or book, the teacher may keep the material just out of reach but within visual sight of the student; thus, encouraging the student to request the wanted item using the communication system. All communicative attempts and initiations should be praised and encouraged.
- In contrast to the pre- or nonverbal student, many students with ASD are able to utilize complex language. However, these students, along with their nonverbal peers, often demonstrate a significant impairment in pragmatic (practical) language. For example, students with autism spectrum disorder often struggle with such

skills as having a social conversation; perceiving, understanding and using gestures, facial expressions, and body language; initiating, maintaining and closing conversations; as well as understanding and using social conventions and rituals. Pragmatic communication skills are an important component of the student's educational program effectively taught through direct instruction as well as through social skill instruction. In addition to difficulty with pragmatic language, students with ASD also have difficulty understanding and comprehending complex language.

- When working with any student with an ASD, a verbal or nonverbal student, it is important not to assume understanding. Teachers must closely monitor the student for receptive comprehension'. Talk slowly and carefully. Some students will require simplified one or two step directions, while others will require extra time to process spoken language. Clearly state instructions and directions indicating what the student is expected to do rather than telling the student what not to do. Additionally, use proximity, gestures, and visual supports to the spoken message.
- While the content of language and communication instruction is similar for all children, the problems and strategies may differ. Work with the speech language pathologist to develop a comprehensive communication program.

e. Social Development Strategies

- Most students with autism spectrum disorders want to have friends, fit in, and be an active member of the social world. However, they have difficulty reading, understanding, and responding to social cues. Social skills, such as having a social conversation; perceiving, understanding and using gestures, facial expressions, and body language; initiating, maintaining and closing conversations; as well as understanding and using social conventions, and rituals, are difficult for students with ASD. Because of this deficit in social understanding, students with autism spectrum disorders may say or do things that irritate and offend other people.
- Helping students with autism spectrum disorders to develop social understanding requires both systematic instruction as well as opportunities to practice the skills within naturally occurring routines. Rules, social stories, role-playing and scripts, cue cards and checklists, coaching, modelling, and friendship groups are all effective strategies for systematically teaching social skills.
- Classroom teachers find it helpful to teach and post the classroom social rules to help students understand the expectations of the classroom or other social situation. In writing rules, be sure to provide concrete positively stated rules that are easy for the student to see and understand. For example, "we use an inside voice so that students can finish their work."

f. Behaviour Strategies

Challenging behaviours, such as self-injurious behaviour, stereotypic behaviour, physical aggression, tantrums, defiance, and property destruction, are among the most difficult and stressful issues faced by parents and educators of children with ASD.

g. Other Considerations

- Parents and education staff work together to identify appropriate intervention methods.
- Intervention methods are consistent across environments (i.e. home, school, community).
- Intervention methods, tools, and materials are supported by research and address the areas of strength and needs of the student.
- Intervention methods allow the child to demonstrate progress toward her IEP goals.
- New skills are taught are developmentally appropriate and meet the child's individual needs.
- Once new skills are acquired, these are practiced in all natural environments (home, school, community).

3.4.3.6 Applying Functional Behaviour Assessment to Challenging Behaviour

As mentioned before behaviours, such as self-injurious behaviour, stereotypic behaviour, physical aggression, tantrums, and property destruction, are difficult and stressful for parents and educators of children with ASD. Research supports the use of functional behaviour assessments (FBA) or functional analysis and positive behaviour supports (PBS) in the treatment of challenging behaviours for children with ASD (Iwata & Worsdell, 2005).

A formal approach to the FBA process typically involves at least three steps using an assessment process. **The basic steps are:**

- Identifying the challenging behaviour;
- Identifying antecedents (events before the behaviour occurred), consequences of the behaviour and setting events which maintain the problem behaviour. o Designing an intervention, based on the conclusions of the assessment, which may alter the identified antecedents, consequences or setting events.

3.4.3.7 Assessment of the Intervention

- Prior to intervention, baseline data on functioning level in the particular area of need is collected.
- IEP team determines how often and in what format data is recorded.
- A criterion is set for determining when a particular intervention is unsuccessful.
- Data are recorded to monitor progress in the program designed to improve the area of need.
- Data are recorded to identify problems or lack of progress.
- Ongoing assessment of the child's skill via the data collection system determines the next set of goals (if appropriate).

3.4.3.8 Transition

- Activity to activity
- Home to school
- School to home
- One grade/school to the next grade/school
- School to post-school environments

3.4.3.9 Opportunities with Peers

- Structured activities with one peer or in small groups are provided to practice newly learned social, academic, communication, coping and self-help skills.
- Opportunities are provided for interaction with peers who have different abilities and skills, which allows for generalization of mastered social, academic, communication, coping and self-help skills.
- Student is given support and opportunities to develop friendships with peers in order to initiate and practice social interaction.
- Peers are provided with a time and environment where they are comfortable to ask questions and receive age appropriate information about autism spectrum disorders.
- Parents are encouraged to meet the staff and share information about their child.
- Resources, such as videos, books and pamphlets on ASD are available for staff, students, and families.
- Support for the staff is provided as they learn to include the student into activities.

3.5 ❐ Vocational Training and career Opportunities

Structure :

3.5 Vocational Training and career Opportunities

IDEA ensures that in U.S.A. special education services are provided to youth with disabilities, including autism. Rather IEP help students to achieve goals according to their interest. They can also choose employment. However, research indicates that as few as 25% of individuals with ASD are employed recently. A recent study of 169 adults with H.F.A found that only about half of the participants were in paid employment (49%) and many (36%) were on social security benefits.

Existing employment options for ASD described in literature include sheltered employment, supported employment and competitive employment. So, there is evidence that employment can positively impact the lives of individuals with ASD, as employment had positive outcomes relating to cognitive performance, reduced anxiety and depression,

and developed, relationship with peers. Moreover, employment must strengthen (heir will be self-confident.

3.5.1 The Importance of Promoting Generalization of Vocational education of ADS

Foundational to implementing steps to effective employment training is a focus on generalization children youth with ASD cause experience difficulty generalizing newly learned skills to other settings, situations, people, and environments. Cause as such a critical component of any employment skills program is to develop a sound plan for transfer of skills across settings, persons, contexts and time. So The goal of any training program is behavioral change; that is, if the students are not impacted in a positive way across most aspects of life, the change cannot be considered very meaningful. Bellini et al. (2010) recommended the following techniques to facilitate generalization.

- Train with multiple persons and across multiple settings.
- Ensure the presence and delivery of natural rein forcers for the performance of social skills.
- Practice the skill in the natural environment.
- Fade prompts as quickly as is feasible.
- Provide multiple exemplars for social rules and concepts.
- Train skills techniques self-monitoring strategies.

Children with autism too eventually need to make a living just like other children. Vocational training help the youngster with autism develop such a skill. Training that leads to employment offers the youngster a sense of self-esteem, confidence, dignity and a sense of accomplishment. More importantly the opportunity to be a productive worker and to contribute to the community promotes independence and enhances a positive self-awareness and self-identity. Adolescence is the prime time to start training in vocation ideally around age 14 even though it might seem that adulthood is far away. What kind of vocational training children should go for will depend on the functional level of the child, their strengths and their interests. Most kids with autism enjoy repetitive work they do well in jobs that require assembling as well as in the information technology industry and in the manufacturing industry. Several vocations should still be explored to find the right fit. Vocational training will -include working on independent life skills, vocational job training, and self-care. No matter how functionally affected a youngster with autism is, with the right training there are things that they can all do. While starting vocational training early is the key to success vocational preparation begins early in life. There are three stages of vocational training considered. These are:

1. **Elementary school years:** Preparation for prevocational training starts in

elementary school. Children with autism are strong at visual tasks hence they are quick to learn tasks that use this skill. Skills that are useful in developing career awareness and feeling of job satisfaction include: matching, sorting, correcting sorting errors, matching to jigs (instructions using pictures, drawings, words, or a combination), simple alphabetizing, collecting papers, cleaning tables, serving snacks, getting own snack, delivering messages, packaging and assembly and making simple purchases.

2. **Intermediate school years:** In the intermediate school years work habits such as attention to task, rule compliance, sustained work on already mastered tasks is important. Systematic typing office work such as collating and sophisticated alphabetizing, measurement, survival signs, money calculations, use of vending machines can be taught. These can be taught in both classrooms and community based settings.

3. **High school years:** Skills to learn include self preservation and safety skills, work without supervision and independent movement. The students should receive a combination of classroom instruction and training at varied worksites. It is important that social communication, social performance and interpersonal behaviours are: addressed at all stages. Focus areas include:

- Initiate and respond to interactions with familiar and unfamiliar people
- Understand prohibitions
- Understand and follow unwritten rules
- Participate in positive social experiences
- Maintain an acceptable level of hygiene and grooming
- Recognizing and managing anxiety and other responses to over stimulation.

3.5.2 School-based employment training for with autism spectrum disorder.

There are nine steps are school-based employment training for with autism spectrum disorder. These are :

- Observe other Programs and Collaborate with other-agencies
- Align your Program with State Standards
- Involve Students in the Planning Process in a Meaningful Way
- Connect the Program to Real-world Experiences

- Create Training Materials and Pre-vocational Tasks that Mimic Real-world Processes
- Use Research-based Training Methods
- Integrate Program within the School Community
- Use Authentic "Real-world" Reinforcement
- Vocational Evaluation Checklist for an **Individual** with Autism

3.5.2.1 Observe other Programs and Collaborate with other agencies as far as practicable.

Collaboration is an essential element of developing effective employment training and overall quality transition programming for ADS. Ensuring that school personnel establish collaborative partnerships and network within and across other model school and community settings can greatly inform educators regarding best practices.Design of a vocational program is to locate and observe other classrooms in the area and take into account the methods and strategies they employ to promote vocational instruction and job skills among the students with ADS. Schools have a transition coordinator whose job it is to build interagency collaborations, provide technical assistance, conduct needs assessments and engage in communication to support student transition needs among stakeholders. Professional can also link teachers to other model school and community-based programs through the establishment of community of practice groups that can share best practices and support implementation of long term goals and policy recommendations related to effective transition. In a practical way, these collaborations can help teachers interface with others in their school districts and analyze the programs that have been successful in vocational training such as copy centres, mail delivery, and recycling. Such communities of practice can also enable participation in continuous training on transition needs and resources available in the community and state.

3.5.2.2 Align your Program with Core Academic State Standards

The alignment of the problem should be done is a rational manner so that available facilities and requirment may be taken into consideration. Some alternations and practices have been proposed in the comings pages, these may be followed depending upon the available facilities. For example, high school language arts common core standards

require students to be able to understand the meaning of words in this context includes technical text from a variety of sources in order to solve a problem.

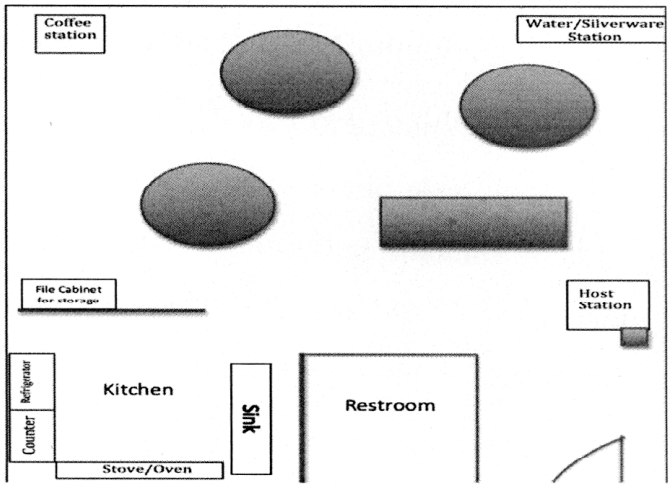
3.5.2.3 Involve Your Students in the Planning Process in a Meaningful Way

Career and vocational development begins with the student must be utilizing a student-directed approach requires consideration of student preferences and interests. Determining students' interests and providing them the autonomy and responsibility to decide on, design and evaluate their work empowers them to connect with the content and promotes self-determination. By giving students the opportunity to meaningfully participate in the curriculum, teachers can develop in their students the skills necessary to be pro-active and self-determined members of society. Incorporating meaningful participation in vocational programs by securing student input in job choices, services offered, and outcome-related rewards may increase student "buy-in." This buy-in will consequently increase student motivation and engagement, which are related to improved achievement. The preparation and planning for a classroom requires means decorations, finance decisions and a host of other responsibilities. Including the students in the process of creating the menus based on their favorite meals and snacks and determining prices not only connects to the common core standards but also contributes to increased student motivation. Giving the students artistic design in the creation of the restaurant space is another way to increase the sense of self-determination and emphasize choice in the development process of the vocational program.

3.5.2.4 Connect the Program to Real-World Experiences

The overall goal of vocational program is to teach job skills in a realistic vocational setting that will transfer to a supported, integrated employment setting in the community. So step in any vocational training program is to give students with ASD opportunity to gain experience that will logically lead to jobs after high school in a variety of settings. Although the most directly translatable option would be community-based instruction, many barriers exist that can make it impossible for schools to implement such programs such as funding, transportation, personnel, and location in proximity to possible job placements. In a school community will produce in vocational program is an environment

that incorporates key vocational skills for long-term success. The skills consultation with local community businesses where students might someday work and/or become customers. Important skills such as money management, vocational communication (e.g., greeting customers, taking orders, accepting direction, and inter-staff communication), self-determination, and performance of routine job functions such as cleaning and uniform/hygiene maintenance were identified for instruction. Academic skills necessary to participate in the general education curriculum and community beyond the classroom. Academic skills included: writing (e.g., orders, receipts, and menus), reading (e.g., menu items, orders coming in/going out of the kitchen, and order forms for inventory), and mathematics (e.g., adding bill totals including tip, calculating change receipts after closing, and depositing money into store account).



3.5.2.5 Create Training Materials and Pre-vocational Tasks that Mimic Real-world Processes

In order to achieve an authentic connection to community job settings, teachers and staff must treat the vocational training setting as the equivalent of a community job placement. Part of this process includes creating the training materials necessary for a vocational setting and ensuring that the process is as realistic as possible. It is important to develop training materials such as employee manuals that can be used when the

students begin their job placements within the school. These training materials should also be based on scientifically validated practices .For students with ASD and other developmental disabilities, visual supports have been found to be particularly helpful. Prior to participating in our restaurant vocational program, students were required to take and pass the state food safety exam, just as they would be required for this type of employment position in the community. The students, now considered restaurant staff, were assisted in their daily activities by laminated checklists that they used to track their progress and evaluate their task completion. By linking evidence-based strategies to real-world employment expectations in the creation of our materials, our student staff members were trained to become self-reliant and able to self-prompt their way through the day's work.

3.5.2.6 Use Research-Based Training Methods

The school curriculum and instructional methods used within both the special and general education settings must be derived from scientifically based strategies, The goal is to ensure each student's academic success and applies equally to students with and without disabilities. For students with significant disabilities at the transition stage, it is critical that these research-based approaches be applied to the development of their vocational skills in a functionally relevant way. Teachers must investigate evidence-based and scientifically validated practices and apply these in their training programs.

3.5.2.7 Integrate Program within the School Community

Integrate Your Program within the School Community should be to encourage meaningful interaction among students such that students and staff in self-contained classrooms are a vital part of the school community. Connecting students to the school community via a simulated community environment offers real world challenges similar to a typical employment context. Moreover, communicating with school personnel in a business setting has many potential benefits. The benefits are:

First, students in self-contained settings often become accustomed to communicating only with other students and staff in their own classroom. By expanding the program to personnel outside of the self-contained setting, atypical school communication was encouraged and expansion of students' language use and abilities was facilitated.

Second, providing a service that is not only tangible but is also visible within the school setting provides natural reinforces that a contrived setting is simply unable to offer effectively.

Third, school-wide recognition of the students' efforts creates a sense of responsibility and identification that increases the students' sense of self-worth and self-esteem.

3.5.2.8. Use Authentic "Real-world" Reinforcement

People go to work for a variety of reasons. Those that stay at their jobs and perform to the best of their ability do so partly due to a level of pride and purpose they experience in their work. This level of satisfaction should be no different for students working in an inclusive vocational setting. Naturally occurring rein forcers such as social praise from a job well done can increase generalization of learned skills.

The in-crease in self-determination can be established easily in a vocational setting and in self-determination have been correlated with enhanced "social capital" or connection with those in the surrounding community, greater choice and control, as well as enhanced health and economic success. So some following these steps from beginning to end with the students' participation and input creates these are:

- Sense of ownership that will drive them to continue and to further develop their skills.
- Establishing a vocational setting with natural maintaining contingencies such as payment and evaluation systems similar to those used in everyday work settings can reinforce appropriate work ethics and behaviour.
- Developing a "pay check" system to reward employees for their efforts aligned with a reward system such as a classroom store motivates students the same way we are all motivated to get up each day and go to work.

3.5.2.9. Vocational Evaluation Checklist for an Individual with Autism

Vocational Evaluation Checklist for an Individual with Autism

Student:..... **Work Setting:.....**

Evaluator:..... **Date:.....**

What are this student's strengths/limitations?

	Can do	Can do with help	Comments
COMMUNICATION :			
Understands verbal language			
Requests things desired/needed			
Expresses refusals			
Engages in social conversatioa			
Initiates communication			
Uses pictures/gestuies			
to communicate			
Recognizes words			
Comprehends sentences			

	Can do	Can do with help	Comments
SOCIAL SKILLS;			
Initiates social interaction			
Responds to social interaction			
Shares with peers			
Waits when necessary			
Takes turns with peers			
Models from peers			

	Can do	Can do with help	Comments
WORK BEHAVIORS:			
Works accurately			
Works at appropriate rate			

Follows rules			
Stays *oft* task			
Keeps things in order			
Finishes a job			
Works neatly			
Can do repetitive tasks			
Can do multi-step tasks			
Can. solve easy problems			
Remembers steps in activities			
Can do 2-3 step loag sequences			

	Can do	**Can do with help**	**Comments**
MOTOR:			
Has strength to do job			
Has gross motor ability			
Has fine motor ability to do job			
Has visual motor ability to do job			

	Can do	**Caa do Trith help**	**Comments**
FUNCTIONAL ACADEMICS:			
Reads			
Tells time			
Counts			

Where/How does this student do the following:

	Where		**How**
Greets people			
Gives eye contact			
Negotiates			
Initiates			
Waits			

Answer questions:	Where	How
Who?		
What?		
When?		
Where?		
Why?		
Shares Materials		
Shares food		
Responds to compliments		
Initiates comments		
Cannes on 4-6 exchanges on a subject		

“What problem-solving skills does this student have? What does the student do when;

Answer questions:	Where	How
Something is missing:		
Something is too difficult:		
Routine changes:		
Someone she cales about is absent:		
Doesn’t knowwhar to do		
Does something incorrectly:		
Something doesn’t work		
right:		
Corrected:		

During work breaks, does take student:			
	Yes	No	sometimes
Imitate what others do?			
Follow a set routine?			
Imitate appropriate things to do?			
Pace OT engage in sell-stimulatory activities?			
Socially interact with others?			

What does this student need to complete a job successfully'

	Yes	No	Comments
Consistent /clear definition'of beginning and finish			
What is his or her motivation			
"Likes doing activities with someone.			
''Likes doing'' something preferred			
"Likes doing" something of special interest			
"Likes doing" something utilizing strengths			
"Likes doing" something to get something later			

How well does the student do tlie following tasks? (Indicate approximate time to complete task)

	Good	Fair	Poor
Assemble			
Move item			
Repetitive cleaning			
Sequence cleaning			
Cooking			
Collating			
Typing			
Filing			
Computer work			
Calculator			

What prefereuce/aptitudes for jobs does this student demonstrate? As reported by:

Family members:			
Past experiences:			
Observations:			
Other comments:			
Vocational assets:			
Vocational liabilities and suggestions for support;			
Specific recommendations:			

WORK BEHAVIOR CHECKLIST

STUDENT:.....**SCHOOL:** .....

EYALVATOR:.....**DATE:**.....

Code each behavior as MS- Mastered Skill; ES - Emerging Skill; ND-Not Demonstrated

Commnunication:

_____**Communicates** basic needs (i.e. asking for help, accessing **information)**

_____Initiates contact with supervision

_____Relays needed information

_____Understands work routine and expectations

Social Skills:

_____Interacts with co-workers and supervisors

_____Works along-side co-workers

_____Cares for personal hygiene needs

_____Responds appropriately to social contacts

Manaaes free time during breaks

Social Appropriate Behavior:

_____ Works continuously without disruptions

_____Works without displaying/engaging in major disruptive behaviors

_____Accepts **correction/supervision without** becoming upset

_____Exhibits acceptable behavior during break time

Rate and Production:

_____Works **continuously**

_____Leaves job site only at appropriate times

_____Works with limited **supervision**

_____ Works independently and increases production

_____Works without disruptions in group settings

_____Maiutams a reasonable production rate across the day and across time

_____Transitions to new task in reasonable period of time with adequate productivity

Accuracy and Quality:

_____Completes, tasks with sequenced steps

_____Demonstrates consistency over time

_____Demonstrates ability to prepare work area

_____Demonstrates ability to do a variety of tasks and maintain quality

3.6 Let us Sum Up

Autism means a developmental disability. Now Autism is called a Neuro-biological disorder, significantly affecting verbal and non verbal communication and social interaction, generally evident before age 3. It adversely affects a child's educational performance. Other characteristics often associated with Autism are—engagement in repetitive activities, stereotyped motor movements, unusual responses to sensory experiences and resistance to environmental changes. In characteristics of Autism according to DSM IV, Autism in such a developmental disorder under P.D.D., that includes three qualitative deficits- Lack of Socialization, Lack of Communication and Lack of Flexibility. There three are together called 'Autistic Triad' The Assessment of ASD are Clinical Assessment, Behavioural Assessment, Observational Assessment Educational Assessment, Functional Assessment. After assessment of autism should

be provide in proper education that's why teaching methods of autism various kinds. These are ABA (Shaping, Modeling, Prompting, Enhancing, Time Out, and Extraction), Curriculum based Assessment and Montessori Method. After schooling the foundational to implementing steps to effective employment training is a focus on generalization children youth with ASD cause experience difficulty generalizing newly learned skills to other settings, situations, people, and environments. Cause as such a critical component of any employment skills program is to develop a sound plan for transfer of skills across settings, persons, contexts and time .So The goal of any training program is behavioral change; that is, if the students are not impacted in a positive way across most aspects of life, the change cannot be considered very meaningful. Adults with Autism need level supports and services analogues by their school age counterparts; particularly important are support employment services and behavioural supports. They rightfully expect to be able to live meaningfully, productive lives.

3.7 Check Your Progress

1. What is Autism?

Ans: Autism means a developmental disability also is called Neuro-hiological disorder and significantly affecting verbal and nom verbal communication and social inter-action generally evident before age of 3 **years.**

2. Mention any two or three Signs and symptoms of autism?

Ans: There are many signs and symptoms of autism. These are:

- Doesn't make eye contact (e.g. look at you when being fed).
- Doesn't smile when smiled at.
- Doesn't respond to his or her name or to the sound of a familiar voice.
- Doesn't follow **objects** visually,
- Doesn't point or wave goodbye or use other gestures to communicate.
- Doesn't follow the gesture when you point things out.
- Doesn't make noises to get your attention.
- Doesn't initiate or respond to cuddling.
- Doesn't imitate your movements and facial expressions

3. What is the cause of autism?

Ans: A specific cause is not known, but current research links autism to biological and neurological differences in the brain also environmental influences play role as well also recent researchers have shown that autism does run in families, but not in a clear-cut way.

4. What are the meaning of of 'Autistic Triad'

Ans: Characteristics :

According to DSM IV, Autism in such a developmental disorder under P.D.D., that includes three qualititive deficits.

1. Lack of Socialization
2. Lack of Communication
3. Lack of Flexibility.

There three are together called 'Autistic Triad'

5. Write a full from PPD-NOS?

Ans. Pervasive Developmental Disorder Not Otherwise Specified.

6. What are the meaning of Interdisciplinary and Multidisciplinary assessment?

Ans:

- Interdisciplinary assessment requires respect, integration and coordination among professionals with diverse backgrounds. The interdisciplinary team model is the preferred model in the evaluation and assessment of ASD. The interdisciplinary process involves professionals from various disciplines providing their unique contributions regarding aspects of the child's development and family functioning. The members/ professionals are psychologists, psychiatrists, neurologists, pediatricians, other physicians, speech pathologists, audiologists, occupational therapists, social workers and behavioral and educational specialists.
- Multidisciplinary process/assessment can take with the child and family participating in numerous sessions or it can take place over the course of several months. Professionals in a multidisciplinary process often operate without benefit of collaboration with other team members and often draw separate conclusions based upon' their particular experience and it is a highly stressful process for children and families.

7. In asses the ASD children how many clinical assessment are there?

Ans: There are five assessment are there. These are

- Clinical assessment
- Behavioral Assessment
- Observation Assessment,
- Educational Assessment
- Functional Assessment.

8. Write a full from of A.A.P.

Ans: The American Academy of Pediatrics (AAP)

9. Mention any four or five Principles Instructional Approaches of Autism.

Ans: There are many principles of instructional approaches of autism. These are:

- Determine the most efficient and effective program for the child. And it's based on current research and effective practices.
- Is provided by appropriately trained and competent personnel including parents as appropriate. Make sure staff have specialized training and certification or licensure.
- Is reflective of the child's areas of strengths and needs that drive the curriculum. Allow the program to integrate techniques or strategies designed to address an array of the child's needs.
- Includes a variety of methodologies and approaches, which can be integrated. Use strategies that are most cost effective.
- Is based on comprehensive assessment results. Ensure that programming addresses aspects of ASD and have social validity.
- Is determined by an IEP team that is multidisciplinary and includes the parent. Ensure that the program is efficient, consistent, and compatible among providers and settings.
- Program should be outcome-based and evaluation program must be the effectiveness of the child. Make sure the services allow for individualization, and can be validated for the specific child.
- Provide ongoing evaluation of programming and intervention outcomes via

performance based assessment and observational data. Have standards for mastery of goals and objectives.

10. Mention the various representative comprehensive programs of instructional approaches of ASD.

Ans: There are six representative comprehensive programs of instructional approaches. These are:

i. Developmental Approach

ii. Applied Behaviour Analysis (ABA)

iii. Structured Teaching

iv. Psychotherapies

v. Sensorimotor Therapy

vi. Play

II. Write a full from of AFBAC. What is the function of this approach and mentions the steps.

Ans: The full from AFBAC is an Applying Functional Behaviour Assessment to Challenging Behaviour.

The function of this behaviour approach is it is functional behaviour assessments (FBA) or functional analysis and positive behaviour supports (PBS) in the treatment of challenging behaviours for children with ASD. The challenging behaviours such as self-injurious behaviour, stereotypic behaviour, physical aggression and tantrums.

A formal approach of Applying Functional Behaviour Assessment to Challenging Behaviour basic steps are:

a. Identifying the challenging behaviour;

b. Identifying antecedents (events before the behaviour occurred), consequences of the behaviour and setting events which maintain the problem behaviour.

c. Designing an intervention, based on the conclusions of the assessment, which may alter the identified antecedents, consequences or setting events.

12. Mention any three and four stages of The Importance of Promoting Generalization of Vocational education of ADS.

Ans:

- Train with multiple persons and across multiple settings.
- Ensure the presence and delivery of natural **rein** forcers for the performance of social **skills.**
- Practice the skill in the natural environment.
- Fade prompts as quickly as is feasible.
- Provide multiple exemplars for social rules and concepts.
- Train skills techniques self-monitoring strategies.

13. How many stages will be consider in early student with ASD for vocational training.

Ans: There are three stages of vocational training considered. These are:

- **Elementary school years:** Preparation for pre-vocational training starts in elementary school. Children with autism are strong at visual tasks hence they are quick to learn tasks that use this skill. Skills that are useful in developing career awareness and feeling of job satisfaction include: matching, sorting, correcting sorting errors, matching to jigs (instructions using pictures, drawings, words, or a combination), simple alphabetizing, collecting papers, cleaning tables, serving snacks, getting own snack, delivering messages, packaging and assembly and making simple purchases.
- **Intermediate school years:** In the intermediate school years work habits such as attention to task, rule compliance, sustained work on already mastered tasks is important. Systematic typing office work such as collating and sophisticated alphabetizing, measurement, survival signs, money calculations, use of vending machines can be taught. These can be taught in both classrooms and community based settings.
- **High school years:** Skills to learn include self preservation and safety skills, work without supervision and independent movement. The students should receive a combination of classroom instruction and training at varied worksites.

14. How many steps are there school-based employment training for with autism spectrum disorder.

Ans: There are nine steps are there school-based employment training for with autism spectrum disorder. These are:

- Observe other Programs and Collaborate with other agencies.
- Align your Program with State Standards
- Involve Students in the Planning Process in a Meaningful Way
- Connect the Program to Real-world Experiences
- Create Training Materials and Pre-vocational Tasks that Mimic Real-world Processes
- Use Research-based Training Methods
- Integrate Program within the School Community
- Use Authentic "Real-world" Reinforcement
- Vocational Evaluation Checklist for an Individual with Autism

15. What is the meaning of Integrate Program within the School Community? What are the benefits of this Program?

Ans: The meaning of integrate Your Program within the School Community is it should be to encourage meaningful interaction among students such that students and staff in self-contained classrooms are a vital part of the school community. Connecting students to the school community via a simulated community environment offers real world challenges similar to a typical employment context. Moreover, communicating with school personnel in a business setting has many potential benefits.

The benefits are; **First,** students in self-contained settings often become accustomed to communicating only with other students and staff in their own classroom. By expanding the program to personnel outside of the self-contained setting, atypical school communication was encouraged and expansion of students' language use and abilities was facilitated.

Second, providing a service that is not only tangible but is also visible within the school setting provides natural reinforces that a contrived setting is simply unable to offer effectively.

Third, school-wide recognition of the students' efforts creates a sense of responsibility and identification that increases the students' sense of self-worth and self-esteem.

3.8 Unit End Exercise:

1. What is Autism? Describe the details about the Signs, symptoms, characteristics associated with autism spectrum disorders and common characteristics in autism spectrum disorders.
2. What is Autism? Autism is Treatable? What are causes about the autism? Describe the details about the types of autism and difiential diagnostic feature about the autism and related disorder.
3. What is a tool? Describe the briefly interdisciplinary and multidisciplinary assessment and Different Diagnostic tools for Autism Spectrum Disorder.
4. Describe the details about the assessment of Autism Spectrum Disorder.
5. Describe the details about the instructional approaches of Autism Spectrum Disorder.
6. Describe the details about the teaching methods of Autism Spectrum Disorder.
7. Describe the details about Quality Program Indicators Autism Spectrum Disorder.
8. Describe the details about school-based employment training for with autism spectrum disorder.

3.9 References

1. American Psychiatric Association. (2000). Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revised (DSM-IV-TR), Washington D.C
2. Dr. Nanda.B.P.-Challenge children; Problem and management.
3. Shirlington, DeWeese, & Dalrymple, 1986, Vocational Evaluation Checklist for an Individual with Autism
4. https://www.adhc.nsw.gov.au/__data/assets/fue/0016/228202/37_autismj:esearch _report.pdf
5. http://www.nimh.nih.giv/health/publications/autism/nimhautismspectrum.pdf
6. http://wwwl.dshs.wa.gov/dvr/index.htm
7. http://www.surgeongeneral.gov
8. http://www.cdc.gov/ncbddd/autism/overview.htm

9. http://www.educ.gov.bc.ca/specialed/docs.htm
10. http://www.autism-society.org(Autism Society of America)
11. http://www/autism.org(Centre for the Study of Autism)
12. www.christinaburkaba.com
13. www.diffleam,com
14. www.polyxo.com
15. www.autismspeak.org
16. www.autismspot.com
17. www.nas.org.uk

Notes

মানুষের জ্ঞান ও ভাবকে বইয়ের মধ্যে সঞ্চিত করিবার যে একটা প্রচুর সুবিধা আছে, সে কথা কেহই অস্বীকার করিতে পারে না। কিন্তু সেই সুবিধার দ্বারা মনের স্বাভাবিক শক্তিকে একেবারে আচ্ছন্ন করিয়া ফেলিলে বুদ্ধিকে বাবু করিয়া তোলা হয়।

— রবীন্দ্রনাথ ঠাকুর

ভারতের একটা mission আছে, একটা গৌরবময় ভবিষ্যৎ আছে, সেই ভবিষ্যৎ ভারতের উত্তরাধিকারী আমরাই। নূতন ভারতের মুক্তির ইতিহাস আমরাই রচনা করছি এবং করব। এই বিশ্বাস আছে বলেই আমরা সব দুঃখ কষ্ট সহ্য করতে পারি, অন্ধকারময় বর্তমানকে অগ্রাহ্য করতে পারি, বাস্তবের নিষ্ঠুর সত্যগুলি আদর্শের কঠিন আঘাতে ধূলিসাৎ করতে পারি।

— সুভাষচন্দ্র বসু

Any system of education which ignores Indian conditions, requirements, history and sociology is too unscientific to commend itself to any rational support.

— Subhas Chandra Bose

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