



தமிழ்நாடு திறந்தநிலைப் பல்கலைக்கழகம்
TAMILNADU OPEN UNIVERSITY

SEMESTER -01

BACHELOR OF EDUCATION
in
SPECIAL EDUCATION

SED 15 - INTRODUCTION TO NEURODEVELOPMENTAL
DISABILITIES [LD, ID & AUTISM]



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TAMIL NADU OPEN UNIVERSITY

**SCHOOL OF SPECIAL EDUCATION AND
REHABILITATION**

**Bachelor of Education in Special Education
(B.Ed.Spl.Ed.)**

SEMESTER – I

SED-15

**INTRODUCTION TO NEURO
DEVELOPMENTAL DISABILITIES**

**No. 577, Anna Salai, Saidapet,
Chennai – 600 015.**

TAMIL NADU OPEN UNIVERSITY

SCHOOL OF SPECIAL EDUCATION AND REHABILITATION



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TAMIL NADU OPEN UNIVERSITY

(A State Open University Established by Government of Tamil Nadu, Recognized by UGC & DEB, Member in Asian Association of Open Universities & Association of Commonwealth Universities)

No.577, Anna Salai, Saidapet, Chennai - 600 015. Tamil Nadu.

Professor K.Parthasarathy

Vice Chancellor

20-03-2021

Dear Learner,

Warm Greetings!

I deem it a great pleasure in welcoming you to our vibrant Open and Distance Learning family of Tamil Nadu Open University (TNOU). Being approved by the University Grants Commission and Distance Education Bureau, the TNOU is striving hard to ensure qualitative Open, Distance and Online Education (ODOE). The University is contributing not only serving to reach the unreached, but also enhancing the Gross Enrolment Ratio (GER) by offering various programmes at different levels for the needy and interested.

You are taking up the B.Ed., Special Education programme as a professional study by merit. The B.Ed. Special Education Programme offered by the TNOU is recognized by the Rehabilitation Council of India (RCI), the University Grants Commission (UGC) and the State Government. You might be aware that the trained teachers/personnel/professionals who come out from this programme of study can work in the special schools, inclusive setting, colleges and rehabilitation centres, and such certified persons alone are eligible to work with, train persons with disabilities as per the law enforcement in our country.

The Rights of Persons with Disabilities Act, 2016 stated that all the children with disabilities between 6-18 yrs of age are to be considered for inclusive education. Accordingly, the syllabus of B.Ed.Spl.Ed.Programme has been framed and updated including current practices, latest policies and Acts, and innovative models and strategies in the field of disability and non-disability areas. The Self -Learning Materials (SLM) prepared with the help of subject experts and as per the UGC Guidelines & SLM Policy of TNOU. The handy SLM would be very much helpful for you, and teachers, parents, and other professionals dealing with persons with disabilities.

I wish you great success in all your endeavors and to become a versatile special educator.

With regards,

(K.PARTHASARATHY)



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**TAMIL NADU OPEN UNIVERSITY
SCHOOL OF SPECIAL EDUCATION AND
REHABILITATION**

SED – 15

**INTRODUCTION TO NEURO
DEVELOPMENTAL DISABILITIES**

BLOCK 1

Learning Disability: Nature, Needs and Intervention

BLOCK 2

Intellectual Disability: Nature, Needs and Intervention

BLOCK 3

Autism Spectrum Disorder: Nature, Needs and Intervention

SED – 15: INTRODUCTION TO NEURO DEVELOPMENTAL DISABILITIES

Introduction

A decade after the emergence of the UNCRPD 2006, the RPwD Act 2016 of India has its impact on the field of disabilities by increasing the list of disabilities from 7 to 21. It includes learning disabilities, autism spectrum disorder, and changed the term mental retardation to intellectual disabilities. This is another important milestone for the equal participation and protection of rights of persons with disabilities.

This course integrates relevant subject matter in the areas of Learning Disability, intellectual Disability and Autism Spectrum Disorder. This course will prepare pre-service teachers to work with students with Neuro Developmental disabilities in inclusive and specialized settings. It fosters the acquisition of the broad-based knowledge and skills needed to provide effective educational programs for students with learning and behaviour characteristics. The course emphasizes implications for educational and vocational programming, curriculum, and instruction.

Course Objectives

After completing the course the student-teachers will be able to

- Discuss the characteristics and types of learning disability.
- Describe the tools, areas of assessment and apply intervention strategies to enhance learning.
- Explain the characteristics and types of Intellectual disability.
- Describe the tools, areas of assessment and prepare and apply intervention strategies for independent living.
- Explain the characteristics and types of Autism Spectrum Disorder.
- Describe the tools, areas of assessment and apply intervention strategies.

Course Outcomes

After completing the course the student-teachers will be able to

- Identify children with learning disabilities based on their characteristics and types.
- Use appropriate tools to assess learning disabilities.

- Device and implement teaching strategies suitable for children with learning disabilities.
- Practice appropriate intervention strategies for children with intellectual disabilities.
- Assess children with autism and uses appropriate intervention techniques for them.
- Help parents to involve them in their children's education and social skills.
- Assist children with neuro developmental disabilities to lead an independent life.

COURSE SYLLABUS

Block 1: Learning Disability: Nature, Needs and Intervention

- Unit 1 Definition, Types and Characteristics
- Unit 2 Tools and Areas of Assessment
- Unit 3 Strategies for reading, Writing and Maths
- Unit 4 Curricular Adaptations, IEP, Further Education,
- Unit 5 Transition Education, Life Long Education

Block 2: Intellectual Disability: Nature, Needs and Intervention

- Unit 6 Definition, Types and Characteristics
- Unit 7 Tools and Areas of Assessment
- Unit 8 Strategies for Functional Academics and Social Skills
- Unit 9 Assistive Devices, Adaptations, Individualized Education Plan, Person Centered Plan, Life Skill Education
- Unit 10 Vocational Training and Independent Living

Block 3: Autism Spectrum Disorder: Nature, Needs and Intervention

- Unit 11 Definition, Types and Characteristics
- Unit 12 Tools and Areas of Assessment
- Unit 13 Instructional Approaches
- Unit 14 Teaching Methods
- Unit 15 Vocational Training and Career Opportunities

SED-15 INTRODUCTION TO NEURO DEVELOPMENTAL DISABILITIES

Credits: 02

COURSE INTRODUCTION

Dear learner, this course provides you an overall picture of three major neuro developmental disabilities namely learning disabilities, intellectual disabilities and autism spectrum disorder. The content included in this course describes the basic concepts related to the neuro developmental disorders and their educational implications. This course has three blocks of each five units which will deal about learning disabilities, intellectual disabilities and autism spectrum disorder respectively.

Block-1 discusses the fundamental concepts such as definitions, types and characteristics of learning disabilities. Further, you will learn about the tools of assessment of various types of learning disabilities. The teaching strategies for reading, writing and arithmetic related learning disabilities. This block describes the curricular adaptation and transition education for learning disabilities which will enable you to understand the importance of education to the children with learning disabilities.

Based on the nature, intellectual disabilities are considered to be the most complicated disorder among all. Block-2 will explain you the definitions, types and characteristics of intellectual disabilities. The tools and areas of assessment of intellectual disabilities are described in this block. Teaching children with intellectual disabilities is a challenging task because of their sub-average intelligence. This block will help you to understand the various strategies for teaching the functional academics and social skills to persons with such disabilities. Since the severity varies from person to person with intellectual disabilities, each person should be given individual attention in adaptations, assistive devices, education plan, life skills etc. Further, vocational training is also to be provided to them for their independent living.

Concepts, definitions, and characteristics of autism spectrum disorder are described in Block-3. You will understand the important aspects and tools for the assessment of autism. The instructional approaches and the teaching methods are discussed in this block. The importance of

vocational training and career opportunities for persons with autism spectrum disorder is also briefed in this block.



TAMIL NADU OPEN UNIVERSITY
SCHOOL OF SPECIAL EDUCATION AND
REHABILITATION

SED-15

INTRODUCTION TO NEURO DEVELOPMENTAL DISABILITIES

BLOCK

1

LEARNING DISABILITY: NATURE, NEEDS AND INTERVENTION

Unit 1

Definition, Types and Characteristics

Unit 2

Tools and Areas of Assessment

Unit 3

Strategies for reading, Writing and Maths

Unit 4

Curricular Adaptation, IEP, Further Education

Unit 5

Transition Education, Life Long Education

**BLOCK 1 LEARNING DISABILITY: NATURE, NEEDS AND
INTERVENTION**

Block Structure

Introduction

Objectives

Unit 1 Definition, Types and Characteristics

 1.1 Definitions of Learning Disabilities

 1.2 Types of Learning Disabilities

 1.3 Characteristics of Learning Disabilities

Unit 2 Tools and Areas of Assessment

Unit 3 Strategies for reading, Writing and Maths

 3.1 Reading

 3.2 Writing

 3.3 Maths skills

Unit 4 Curricular Adaptation, IEP, Further Education

Unit 5 Transition Education, Life Long Education

Let us Sum Up

Check Your Progress

Glossaries

Answers to Check your Progress

Suggested Readings

INTRODUCTION

Learning is relatively permanent change in behaviour as by way of practice and training of skills and values. It is acquired by study, by experience, or by teaching. When children fail to find out, they impair the capacity to take advantage of new experiences. They are unable to find out because something prevents them from learning which can be internal or external causes. This is often termed as "Learning Disability". While learning this unit, you will get ready to understand the definitions, characteristics of learning disabilities. The available tools and areas of

assessments also are discussed. Specifically, the strategies for reading, writing and maths are described. Some inclusive education techniques like curricular adaptation, Individualised Educational Programme are discussed. The life coping education opportunities are insisted for the future life of persons with disabilities.

UNIT 1 DEFINITION, TYPES AND CHARACTERISTICS

Objectives

After going through this block, you will be able to:

- Define learning disabilities.
- Distinguish between the types of learning disabilities based on their characteristics.

Overview

It is widely observed that many schools identify students who have average or above average intelligence but continuously fail to make normal progress in one or more skills of learning namely reading, writing and arithmetic. Teachers fail to understand the reason for this significant discrepancy between the ability and achievement of the otherwise normal child. The pressure from parents to improve the areas of academics where their wards are not able to score well makes the teachers all the more puzzled and helpless. Most of the schools, teachers and parents in India lack awareness about learning disabilities of children and the suitable intervention techniques to overcome it. Thus the learning disabilities in children go unnoticed and unattended in many children. Teachers require training to address the special needs of children.

Prevalence of learning disabilities has gradually been estimated to be increased after the wide range of assessments practiced by many institutions. India has approximately ninety million people with varying degrees of learning disabilities and an average class in schools has about five students with learning disabilities. The incidents of dyslexia in primary school children in India have been reported to be 2-18% of dyslexia (14%), of dysgraphia 14.5% of dyscalculia. The prevalence of

specific learning disabilities was 15.17%, whereas 12.5%, 11.2% and 10.5% had dysgraphia, dyslexia and dyscalculia respectively.

Influence of RPwD Act 2016 on Specific Learning Disabilities:
As per the Rights of Persons with Disabilities (RPWD) Act, 2016 “Specific learning disabilities” means a heterogeneous group of conditions wherein there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and developmental aphasia.

Learning disability is a global term that describes specific kinds of learning problems. Over time, it is also called as learning difficulty and developmental disability. Whatever way it is said, It can cause a person to have problem in learning and using certain skills such as reading, writing, listening, speaking, reasoning and doing math. Children with learning disability, speak well, are smart and intelligent, but they have academic difficulties leading to emotional and behaviour problems leaving the child frustrated and defeated. These children seem to have difficulty not only in processing information received from visual and sensory perceptual experience but also in organizing data to help read, write and to do maths. Children with Learning Disabilities often experience low self esteem and self confidence due to stigmatisation. They often have a hard time asking for help because of fear of being ridiculed. Lots of people think erroneously that learning disabled kids are retarded. They are not always able to express their feelings in words and may use their behaviour or actions to express themselves. They have fewer acknowledgments from peer gathered with basic suggestions of troublesome life for themselves and for those around them in the event that unhandled.

1.1 Definitions of Learning Disabilities

The concept of learning disabilities is thought to have originated in the United States in the 1960s. Learning disability is recognized as one of the 21 categories of disability within the Rights of Persons with Disabilities Act (2016) of India.

Here are some of the important definitions of learning disabilities in the order of chronology which helps you to understand the evolution of the definition over time.

Kirk, 1962:

A learning disability refers to retardation, disorder, or delayed development in one or more of the processes of speech, language, reading, writing, arithmetic, or other school subject resulting from a psychological handicap caused by a possible cerebral dysfunction and/or emotional or behavioural disturbances. It is not the result of intellectual disabilities, sensory deprivation, or cultural and instructional factors.

National Joint Committee on Learning Disabilities, NJCLD, 1988, 1993

Learning disability is a general term that refers to a heterogeneous group of disorders manifested by significant difficulty in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual, caused due to central nervous system dysfunction, and may occur across the life span. Problems of self-regulation, social cognition and social interaction may exist with learning disabilities, but do not by themselves constitute a learning disability. Although learning disabilities may occur along with other handicapping conditions (for example sensory impairment, intellectual disabilities, social and emotional disturbance) or with extrinsic influences (such as cultural differences, insufficient or inappropriate instruction), which are not the results of these conditions or influences.

Hammill - 1990

LD is marked by heterogeneity, LD is probably the result of CNS dysfunction, LD involves psychological process disorders, LD is associated with underachievement, LD can be manifested in spoken language, academic or thinking disorders, LD occurs across the life span, and LD does not result from other conditions.

IDEA - 2004:

The definition of Learning Disabilities in the Federal Law, defined the term specific learning disability means a disorder in one or more of basic psychological process 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 to do mathematical calculations.

RPWD Act-2016, India:

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

1.2 Types of Learning Disabilities

When it comes to teaching, there is no one size fits all solution that can be implemented. The imparting of knowledge is a process that is highly dependent on the student's innate abilities and the ability to grasp knowledge. In some cases, it may be Fast Learners while some may not and would need more time to process the information that is given to them.

Learning Disability and Learning Difficulty are two terms used by different countries synonymously and some used it with a difference. Learning Disability is the inability to learn due to a significant, lifelong condition that starts before adulthood, affects development and leads to help being required to understand information, learn skills, and cope independently. The problem persists even after remediation or intervention. Without appropriate intervention, a learning disability puts children in great difficulty in learning with little scope of achieving at levels close to their academic potential.

Learning Difficulties arise due to difficulty in learning underachievement academically for a wide range of reasons, including factors such as: sensory impairment (problems in vision or hearing); severe behavioural,

psychological or emotional issues, multi lingual educational system, high absenteeism; ineffective instruction; or, inadequate curricula. These students have the potential to achieve at age-appropriate levels once provided with programs that incorporate appropriate support and evidence-based instruction. A learning difficulty could be viewed as a normal deviance of brain function. Everyone has a difficulty in one area or the other. Most of the time, it does not interfere with day-to-day life, but when the area of difficulty is in the cognitive region it obstructs intellectual development.

a. Dyslexia

Dyslexia is one of the most talked about learning disabilities characterized by specific difficulties that hamper the ability to read. Their disability is not just limited to reading. It also affects their visual, auditory and motor skills.

Children diagnosed with Dyslexia find it challenging to comprehend textual content. There are several ways to understand that the student is struggling with Dyslexia - such as, observing any phonemic awareness and phonological processing challenges.

They may read each word with fluency but find it hard to comprehend what they have just read. Reading may also be choppy or laborious.

b. Dysgraphia

Dysgraphia comes from two Greek words meaning 'poor' and 'writing'. It is the term, applied to those whose difficulties are confined to fine motor skills required for handwriting and it leads to problems with the expression of thoughts in writing. It is a specific learning difficulty as defined by the Disability Discrimination Act.

Simply put, dysgraphia refers to difficulties with written expression. Students suffering from this disability tend to find it challenging to hold a pencil, apply appropriate pressure when writing or drawing, or they may even feel tired and experience shoulder or wrist discomfort while writing.

As a result of these challenges, it's common to find students struggle to frame simple sentences, have difficulties with printing legibly and often lack grammatical awareness. There is a distinct difference between the child's spoken and written expressive abilities.

c. Dyscalculia

The word 'dyscalculia' means difficulty performing maths calculations. While mathematics might not be every child's strong point, those with dyscalculia in particular, find it even more challenging to grasp number-related concepts, carry out calculations, and problem solve.

Some of the signs to look out for include the inability to arrange numbers in a sequence, and struggles with comprehending measurements, or even estimations of time.

d. Nonverbal Learning Disability

The motor clumsiness in Nonverbal learning disability is very deceptive in otherwise an intelligent child who is eloquent in verbal proficiency supported by flowery language and confidence, reach mile stones early like in reading and spelling. The problems usually surface on counts of visual-spatial skills, lacks organizational skills and poor social behaviour.

e. Motor Skills Disability (Dyspraxia)

Dyspraxia is sometimes called deficits in motor planning; It refers to a variety of difficulties with motor skills. Dyspraxia can cause difficulty with single step tasks such as combing hair or waving goodbye, multi-step tasks like brushing teeth or getting dressed, or with establishing spatial relationships such as being able to accurately position one object in relation to another.

Learning disability has not gained much attention in Indian context. It is observed that conversational level of LD children could be adequate, though they may have specific delays or deficit in acquisition on formal language assessment. Research with other Indian languages have to be integrated into research on prevalence of LD in children with medium of instruction other than English. However, it is clear that LD is found in Indian children from both English speaking and vernacular backgrounds.

Specific Learning Disability (SLD)

The term “specific learning disability is a term used to indicate difficulty in any one or more of the areas of learning disability namely dyslexia (reading problems), dysgraphia (writing problems) involving psychological processes affecting the capacity to read, write, listen or do mathematic calculations.

1.3 Characteristics of Learning Disabilities

There is no single sign that shows a person has a learning disability. Experts look for a noticeable difference between, how well a child does in school and how well he or she could do, given his or her intelligence or ability. There are also certain clues that may mean a child has a learning disability. We've listed a few below. Most relate to elementary school tasks, because learning disabilities tend to be identified in elementary school. A child probably won't show all of these signs, or even most of them. However, if a child shows a number of these problems, then parents and the teacher should consider the possibility that the child has a learning disability.

When a child has a learning disability, he or she may exhibit the following characteristics:

- Have trouble learning the alphabet, rhyming words, or matching letters to their sounds
- Make many mistakes when reading aloud, and repeat and pause often
- Not understand what he or she reads
- Have real trouble with spelling
- Have very messy handwriting or hold a pencil awkwardly
- Struggle to express ideas in writing
- Learn language late and have a limited vocabulary
- Have trouble remembering the sounds that letters make, or in hearing slight differences between words
- Have trouble understanding jokes, comic strips, and sarcasm
- Have trouble following directions
- Mispronounce words or use a wrong word that sounds similar

- Have trouble organizing what he or she wants to say or unable to think of the word needed for writing or conversing
- Not follow the social rules of conversation, such as taking turns, and may stand too close to the listener
- Confuse math symbols and misread numbers
- unable to retell a story in order (what happened first, second, third)
- Not know where to begin a task or how to go on from there

Check your progress

Notes: a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

1. Define learning disabilities as per RPWD Act 2016.

2. Mention any 3 characteristics of learning disabilities.

UNIT 2 TOOLS AND AREAS OF ASSESSMENT

Objectives

After going through this block, you will be able to:

- Handle tools for assessing learning disability.
- Identify areas of assessment of learning disabilities.

The National Joint Committee on Learning Disabilities (2010) states that, the purpose of a comprehensive assessment and evaluation is to accurately identify a student's patterns of strengths and needs. The term assessment is used in many different contexts for a variety of purposes in educational settings including individual and group, standardized and informal, and formative and summative.

Assessment of the causes of learning disabilities usually begins when the parents or the teachers are worried about the child's learning progress. In cooperation with the class teacher, the special education teacher evaluates. For example, check whether the child has difficulties in reading, spelling, or mathematics. When the teacher's evaluation seems insufficient and additional help is desired in planning support, the child or adolescent can be referred to the school psychologist, family counselling centre, or health centre for further assessment. This further assessment is necessary when

- in spite of meticulous work and special education services provided, the child does not learn according to expectations;
- the school's own evaluations and assessments do not seem adequate (for example, there is reason to suspect an extensive problem that the special education teacher's methods failed to assess);
- the school requests assistance in planning appropriate educational support;
- the family, teachers, or the child are worried about changes in the child's learning;
- clear regression has occurred in the child's skills;

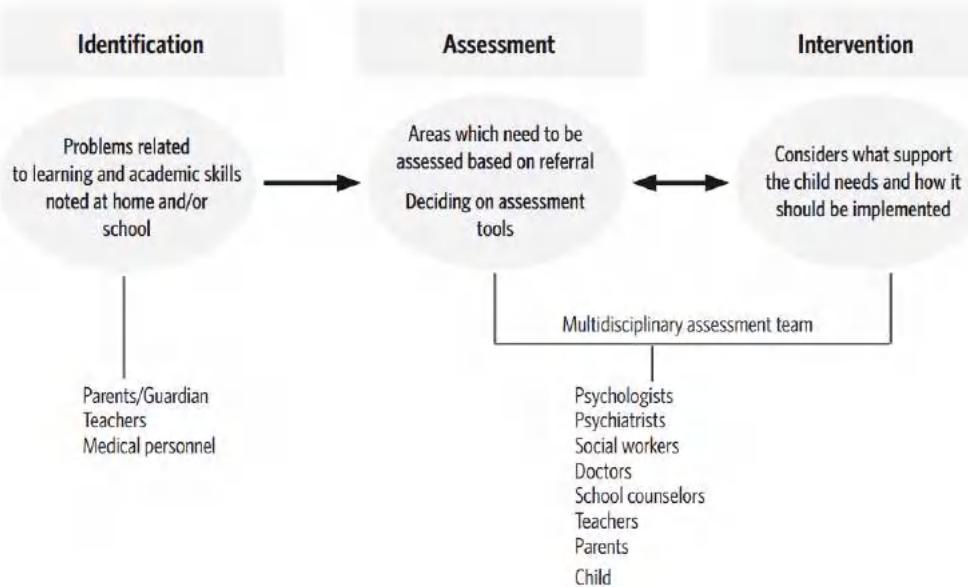


Figure:1 Multidisciplinary approach to assessment and intervention of learning disabilities.

Source: Assessment of Learning Disabilities. Cooperation between Teachers, Psychologists and Parents. African edition, 2011.

The identification of learning related difficulties begins, when a teacher has a feeling or intuition that something may be wrong with a child, or that a child does not perform according to his/her best ability. It is then, the teacher's duty to investigate that notion in order to confirm or refute it. In such a case, initial identification of learning related difficulties is primarily based on the intuition of the teacher. Sometimes parents are the ones who may suspect that their child has certain problems or special needs, leading them to mention these to the teacher for further investigation. Parents who are interested in their children are seldom wrong in their intuition about problems that their children might be experiencing. However, the combined intuition of both teacher and parents does not constitute sufficient grounds for a confirmation of the child's special educational needs. There are three basic skills that teachers should master before they can successfully identify any problem a child has, namely observation, screening, listening, and questioning.

2.1 Observation: Observation can be explained as a "visual inquiry conducted through systematic observation." Teachers should begin their observation without any preconceived ideas about the children in their class. By minutely observing children's behaviour in the classroom, on the sports field and during other extramural activities, one can conclude whether a child manifests any unusual behaviour. In the classroom, the teacher should note whether a student's current behaviour differs from his/her normal behaviour. This also applies to conversational situations and working sessions. The teacher may ask him/herself, "How does the child act towards other learners?" or, "Does the child behave differently in different situations?" A child's nonverbal communication with the teacher and other students, as reflected in body posture, facial expressions and gestures, should also be carefully observed to determine the nature of the child's emotions within the learning environment.

Additionally, teachers should be aware of serious or even mild ailments a child in the classroom may suffer, such as relating to asthma and migraine, impaired vision or hearing, epilepsy or motor coordination problems, as well as malnourishment or undernourishment. The sooner these conditions are identified and the affected children receive treatment, the less impact they will have on the child's achievement in school.

2.2 Screening: Screening is a technique for acquiring information about a great number of people in as quick a time as possible. The results of tests and examination papers can be used as screening methods to identify those children whose results are poorer than they were expected to be. It may be, that a child is diligent in class (e.g., first to answer questions), but does not perform well on examinations. Such a child may be singled out for further diagnosis.

2.3 The psychological assessment

The psychological assessment is more extensive than the teacher's pedagogical assessment. This seeks to understand the child's learning difficulties in relation to the his/her entire cognitive performance profile and earlier development. This makes it possible to detect and exclude other factors that affect learning (e.g., more comprehensive developmental problems, environmental factors).

A well-trained special education teacher can also perform a comprehensive learning assessment. The extent of the assessment to be performed is determined by how problematic the child's situation is felt to be, how multifaceted the problems seem, and by the results of earlier assessments, which usually help to direct and focus the current assessment questions.

The learning disability assessment conducted by a psychologist can be divided into four different procedures, each of which requires gathering information from several parties:

- a) assessment of the phenotype,
- b) developmental history,
- c) assessment of cognitive functions, and
- d) modifying or intervening factors.

a) Phenotype: Learning disability assessment is usually begun with the procedure of examining the child's functions and behaviour, or in other words, defining the phenotype problem. A specific problem could be, for example, dyslexia, difficulties in reading comprehension, or attention

problems. The description of the phenotype helps in choosing the right assessment method and facilitates time management. It is also important for choosing the most effective partnerships for cooperation, and it helps to target the assessment as well as the planning of the intervention.

Identification of learning disability phenotypes which cause parents, the child, teachers or the family doctor to be concerned

The Parents and the Child	The Teachers	Medical Doctor
<ul style="list-style-type: none"> • Poor school success • Difficulties with reading • Difficulties with mathematics • Poor school motivation • Difficulties with homework • Forgetting things already learned • Difficulties with independent work • Self-esteem problems • Problems with friendship • Difficulties in concentration • Losing and forgetting things • Anxiety, fear • Behavioural problems 	<ul style="list-style-type: none"> • Problems with emerging reading skills • Persistent reading and writing difficulties • Difficulties with reading comprehension • Learning difficulties in mathematics • Attention problems • Difficulties with independent work • Behavior and social problems • Difficulties understanding instructions • Problems with visual perception • Memory problems, forgetfulness of things already learned • Motor difficulties 	<ul style="list-style-type: none"> • Delayed development milestones • Inattention • Hyperactivity • Poor coordination • History of birth complications/trauma • Poor visual auditory perceptual skills

	<ul style="list-style-type: none"> • Language difficulties 	
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b) Developmental history: The second, standard assessment procedure is to examine the child's development and its special characteristics and possible risk factors. Knowledge of the child's developmental history offers more specific information about the history and possible causes of the difficulties or disability. Developmental history is often an important source of information, for example, in questions of differential diagnosis.

c) Cognitive functions: The third, procedure is the assessment of cognitive functions and a more detailed evaluation of the problems detected in the phenotype. This offers detailed information on the nature and causes of the difficulties or disability. Cognitive functions and the assessment of academic skills are discussed in detail later in this book.

d) Modifying factors: In the fourth procedure, so-called modifying or intervening factors must be examined. These are the child's environment and interaction with it, and the child's own experiences. They modify how the problems manifest themselves in the child's life, as well as determining the appropriate support. Assessing environmental and interactional factors reveals whether the support for the child's skill level is sufficient or if more extensive support is necessary in the child's life. The child's own experiences ultimately determine how he/she reacts in different situations and how problems are interpreted depending on the child's behaviour. Scientific research has revealed and classified different categories of learning disabilities and in most cases a child's problem can be matched with some existing category or subcategory. However, the child's temperament, personality and environment give the problems an individualised expression. Taking this into consideration whilst determining and making an assessment of the child is vital for understanding the whole problem as well as, in particular, for planning support.

2.4 NIMHANS Index of SLD TEST (NIMHANS -SLD): India

The National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore has developed the index to assess children with LD (Hirisave

U, et al., 2002). There are two levels of this index. They are: Level I for children 5-7 years and Level II for 8-12 years. The index comprises of the following tests:

- a. Attention test (Number cancellation).
- b. Visuo-motor skills (the Bender Gestalt test and the Developmental test of Visuo – Motor integration).
- c. Auditory and Visual Processing (discrimination and memory).
- d. Reading, writing, spelling and comprehension.
- e. Speech and Language including Auditory behaviour (Receptive Language) and Verbal expression.
- f. Arithmetic (Addition, subtraction, multiplication, division and fraction)

(Hirisave U, et al., 2002).

2.5 At the Lokamanya Tilak M.G. Hospital, Sion, Mumbai, the procedure for assessment of Specific Learning Disability involves the following:

- a. Neurological assessment.
- b. Vision and Hearing tests.
- c. Analysis of school progress report.
- d. I.Q. test.
- e. Educational assessment.
- f. Psychiatric assessment.
- g. Case conference.
- h. Counselling.

2.6 Curriculum –based assessments can also be used to assess the academic skills in children. These tests as the name suggests are based on the child's curriculum and therefore not as wide and comprehensive as other tests of achievement. **Grade Level Assessment Device (GLAD)** for children with learning problems in schools has been developed by the National Institute for Empowerment of persons with Intellectual Disability (NIEPID). GLAD can be used from the age of 6

years for grades I to IV. It is available in English, Hindi and includes mathematics.

2.7 WRAT-III (Wide Range Achievement Test-III)

The Wide Range Achievement Test 3 (WRAT3) is the recent edition in a series of instruments which measure codes necessary to learn the basic skills of reading, spelling, and arithmetic. These codes —reading decoding, written encoding, and math computation— are fundamental building blocks of academic achievement, and the assessment of these skills is a vital component of psychological evaluations conducted in clinical and school settings. This test ranges from 5 to 75 years of age.

2.8 DTLD – (Diagnostic Test of Learning Disability)

The authors of DTLD are Smriti Swaroop and Dharmishta Mehta in 1993. The test diagnoses learning disability in ten areas—from Auditory/Visual Perception to Cognitive areas. It consists of 10 sub-tests. It is to be individually administered on the age group 8-11 years old. A deficit in any of the area or areas or a combination of any, would lead to a learning problem. Eye-hand Co-ordination, Figure Ground Perception, Figure Constancy, Position-in-Space, Spatial Relations, Auditory Perception, Memory, Cognitive Abilities, Receptive Language, Expressive Language. It is the test to diagnose learning difficulty and other areas like language, spatial relations, eye hand co-ordination etc. This test is for age 6 to 14 years.

Check your progress

Notes: a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

3. Expand NIMHANS.

**UNIT 3 STRATEGIES FOR READING, WRITING AND
 MATHS**

Objectives

After going through this block, you will be able to:

- Teach the strategies for reading.
- Teach the strategies for writing.
- Teach the strategies for maths.

3.1 Reading

Reading is a multifaceted process involving word recognition, comprehension, fluency, and motivation. Learn how readers integrate these facets to make meaning from print.

Reading is typically an individual activity, although on occasion a person will read out loud for the benefit of other listeners. Reading aloud for one's own use, for better comprehension, is a form of intrapersonal communication. The ability to effectively read, is critical to the success of a student in any subject area. Yet many students experience difficulty in mastering this skill. Engaging students in active reading practices can help them become more involved in their reading, thus aiding comprehension and retention.

Learning to read doesn't just happen. It has to be taught through systematic, organized instruction. Reading is a skill which is built upon through stages and is an ongoing process. Learning to read is the process of acquiring the skills necessary for reading, and the ability to acquire meaning from print.

3.1.1 Reading Skills

Reading skills enable readers to turn writing into meaning and achieve the goals of independence, comprehension, and fluency. Reading skill are specific abilities which enable a reader to:

- Read the written form as meaningful language
- Read anything written with independence, comprehension and fluency
- Mentally interact with the message.

3.1.2 The Reading Process

Learning to read is a complex process which involves hearing, recognizing and decoding sounds. Reading is a cognitive process of decoding symbols for the intention of constructing or deriving meaning (reading comprehension). It is a means of language acquisition, of communication, and of sharing information and ideas. Like all languages, it is a complex interaction between the text and the reader which is shaped by the reader's prior knowledge, experiences, attitude, and language community which is culturally and socially situated.

The reading process, requires continuous practices, development, and refinement. A child who has not been much exposed to language acquisition finds it difficult without informal learning. This involves prior knowledge of the ingredients of reading. Reinforcing the foundation of the earliest stages of reading or modelling language is advantageous. Reading can then be a more effortless task for a child to acquire reading skills when entering school.

Reading is a complex cognitive process of decoding symbols for the intention of constructing or deriving meaning (reading comprehension). It is a means of language acquisition, of communication, and of sharing information and ideas. Like all language, it is a complex interaction between the text and the reader which is shaped by the reader's prior knowledge, experiences, attitude, and language community which is culturally and socially situated. Readers use a variety of reading strategies to assist with decoding (to translate symbols into sounds or visual representations of speech) and comprehension. Readers may use morpheme, semantics, syntax and context clues to identify the meaning of unknown words. Readers integrate the words they have read into their existing framework of knowledge or schema (schemata theory).

3.1.3 The Stages of Reading

Reading development can be viewed as a series of qualitatively different stages through which learners proceed (Harris & Sipay, 1990). Development in each stage is dependent upon the concepts learned in previous stages. Likewise, each stage is prerequisite for the learning that follows. The five stages of reading are essential for understanding written English. Each one must be mastered by the student, but they are not difficult if taught correctly.

3.1.3.a First Stage of Reading: Word Attack Skills

Word attack skills are the ability to convert graphic symbols into intelligible language. Word attack skills are skills needed to be able to make sense of an unknown word in the context of reading. Word attack skills rely on the ability to recognize the sounds that make up words and to put those sounds together (phonemic awareness). More advanced word attack skills involve using context, prefixes or suffixes or a dictionary to determine what a word means. Words must be decoded in order to understand their meanings. Letters are coded symbols. Reading involves learning the code and applying it to letters as they are grouped together to form words. Sometimes the code is quite simple, as with sounds of single letters in short words such as —bit or —jam. At other times the code is complex, as in such words as —augmentation, in which the A-U makes its own unique sound and the T-I copies the sound of S-H. Or consider words like —classicism, where the first C sounds like the letter K, and the second C copies the sound of S. The rules governing the sound a particular letter makes in a given place are for the most part relatively simple, but are largely neglected in major reading instruction methods. For example, if only one sound of the letter A is taught, as in —at, students may flounder when they see words such as —wad, —war, —ball, or —foam. And they need to know why that silent A is in —foam. They also need to know all nine sounds of A.

3.1.3. b Second Stage of Reading: Comprehension

The entire brain must be involved in learning to read. Specialized areas of the brain control different functions. Only after the decoding process is fully operative, can the brain be freed to higher level comprehension skills. When the initial reading instruction method includes all the skills needed for decoding words, meaning and content automatically occur in a natural, orderly and efficient process.

Comprehension is not simply a matter of connecting meaning to individual words and phrases. A skilled reader with strong comprehension engages in a number of cognitive processes that are developed as a result of substantial independent reading as well as training. These include, following a sequence of action or thought, anticipating outcomes, visualizing, synthesizing and recognizing main events, and distinguishing main ideas from subordinate details. There are four levels of comprehension viz literal, inferential, evaluative, and critical.

3.1.3.c Third Stage of Reading: Evaluation

Evaluation involves a careful assessment of that which has been read and comprehended. It involves a different area within the brain than that required for decoding and comprehension. For example, the statement, —Red is green, will be evaluated for accuracy and consequently discredited, if the individual words have been read and understood.

3.1.3.d Fourth Stage of Reading: Application and Retention

Once the information has been read and properly evaluated, it can be applied in a meaningful way by the reader. He or she can then decide what to accept or reject and how to apply it to his or her individual needs. Some of the information may be deemed to be irrelevant or inappropriate and may be discarded.

3.1.3.e Fifth Stage of Reading: Fluency

When the first four steps are functioning comfortably, the reader usually finds that reading is a pleasant and effective way to learn and experience factors that would be inaccessible without the knowledge gleaned from reading. If someone you know struggles with reading, examine the methods used to teach them. It should include all the sounds and rules in an orderly, progressive sequence. When it does, reading becomes a positive, rewarding experience. Fluency means that the reading process is automatic, that the reader recognizes the overwhelming majority of words by sight and does very little conscious decoding. (Decoding refers to the process in which a reader consciously uses phonics and other related skills to figure out the pronunciation of a printed word.) Fluent readers read smoothly, linking words together into meaningful phrases rather than reading word by word. Because fluent

readers recognize almost all words by sight, they focus on the meaning of the text, rather than lower order decoding processes.

Fluency is not the same as comprehension, but it is a precondition for comprehension. Pre-fluent or disfluent readers must use much of their conscious attention and cognitive ability to decode, i.e., to read the words in the text, and thus have less energy available to focus on meaning. While pre-fluent readers work to construct meaning from text on a basic level, it is not until they reach fluency that solid comprehension is possible. It is only when the decoding process becomes automatic, that is, both accurate and rapid, that attention is freed for higher-level reading comprehension skills.

3.1.4 Elements of reading

Word recognition and Comprehension are two distinctive components which are involved in the reading process. Both skills are essential for fluent reading. **Word recognition:** is a process of determining the meaning and pronunciation of a word. Children are taught word recognition strategies in school. When encountering an unknown word, adults continue to use the strategies subconsciously. Word recognition skills enable the readers to recognize words and to learn ways to figure out or unlock unknown words by decoding printed words, matching letters and words with sounds. **Reading comprehension:** It is the act of understanding what is read. Reading comprehension is an intentional, active, interactive process that occurs before, during and after a person reads a particular piece of writing.

3.1.5 Strategies for word recognition

a) **Word Recognition** is the ability of a reader to recognize written words correctly and virtually effortlessly. It is sometimes referred to as "isolated Word Recognition" because it entails a reader's ability to recognize words individually from a list. For example—without the benefit of surrounding words for contextual help. Learners who have difficulty with Word Recognition often misread words by substituting a similar-looking known word for the target word. E.g. reading carrying for carriage or immorality for immortality.

Fluency: It is the ability to read quickly, smoothly and accurately. It involves automaticity. This makes the text comprehensible. Strategies

for building fluency are repeated reading, neurological impress method and a combination of strategies used in word recognition.

b) Phonics

Phonics is a series of rules that children have to memorize and apply when they are sounding out new words. Children are taught a rule, i.e. Silent e, and then they practice reading words with Silent e. Then children work out skill sheets at their desk, highlighting the Silent e rule. Children must learn letter sounds to an automatic level - they must be able to see the letter(s) and say the sound immediately.

Phonics is one method of teaching children how to read. Children are taught how to "sound out" new words by learning the following items:

Consonant letters sounds: b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, y, z

Blend sounds: br, cr, dr, fr, gr, pr, tr, wr, bl, cl, fl, gl, pl, sl, scr, str, sm, sn, sp, sc, sk,

Short vowel sounds: a, e, i, o, u

Always teach short vowel sounds first: a - apple, e - elephant, i- igloo, o - octopus, u - umbrella)

Digraph sounds: sh, ch, th, wh

Two letters combine to make a totally different sound.

Double vowel sounds: ai, ea, ee, oa

These pairs say the name of the first vowel. Other double vowel sounds: oi, oo, ou, ow

Silent e: Silent e is bossy, it doesn't say anything but makes the vowel before it say its own name.

R controlled vowel sounds: ar, er, ir, or, ur

Notice that er, ir and ur make the same sound.

Spoken language can be broken down in many different ways, including sentences into words and words into syllables (e. g., in the word simple, /sim/ and /ple/), onset and rime (e. g., in the word broom, /br/ and /oom/), and individual phonemes (e.g., in the word hamper, /h/, /a/, /m/, /p/, /er/). Manipulating sounds includes deleting, adding, or substituting syllables

or sounds (e.g., say can; say it without the /k/; say can with /m/ instead of /k/). Being phonologically aware means having a general understanding at all of these levels. Phonics is the association of letters and sounds to sound out written symbols (Snider, 1995). It is a system of teaching reading that builds on the alphabetic principle, a system of which a central component is the teaching of correspondences between letters or groups of letters and their pronunciations (Adams, 1990). While teaching phonics teachers must use structured and systematic approaches like:

The phonetic analysis

Vowels: (a, e i o , u)

Teach one vowel at a time

Generate rhyming words (bat , cat hat)

Dictates rhyming word and ask the student to differentiate a same or different Auditory discrimination of initial and final sounds (using vocabulary list, work books). Prepare a list of words that differ by beginning sound and ending sound. Present orally. Ask the student to differentiate between same and different sounds

To discriminate between initial, final, medial sounds. Student has to identify the target position in order to stop Consonant blends:

Initial blends: some examples of blends are: bl-, cl-, cr-, br- , scr-, spl-

Final blends: some examples of final blends are: -mb, -nd

Present the target blend

Teach to target blend

Student identifies the position of the target blend

Student generates words with different positions of the target blend.

Consonant diagraphs: some examples of consonant diagraphs are: sh, ch, th

Student is presented and taught consonant diagraphs through a list of words with diagraphs.

Student has to identify the diagraphs, point or write it.

Syllabication refers to using the sound of words to divide them into pronunciation units. A syllable is a unit of pronunciation and it may include one or more sounds. Three common rules for syllabication are:

- (a) When two consonants (C) comes between two vowels (V), as in supper; divide the word between the two consonants: sup- per (VC- CV pattern)
- (b) When a single consonant comes between the two vowels, divide the word after the first vowel, as in ba-con (V-CV pattern)
- (c) When a word ends in a consonant followed by le, as in cable, the final syllable is made up of consonant and the le (Cle pattern).

Structural Analysis or morphemic analysis: It refers to using the meaningful subunits of a word as identification clues. It refers to the recognition of words through the analysis of meaningful word units such as prefixes, suffixes, root words, compound words, and syllables.

The structural elements include:

1. Compound words (e.g. cowboy)
2. Contractions (e.g. can't)
3. Word endings or inflectional suffixes (e.g. -s, -ed, -er, -est, -ing)
4. Word beginnings or prefixes (e.g. in-, pre-, un-, re-, ex-)
5. Roots (e.g. play in replaying)
6. Syllables (i.e. breaking multisyllabic words into smaller units)

c) Context Clues

There is a good research base for suggesting that, students can use meaning or context clues to help identify words and that instruction can help improve their use of such clues (Johnson & Baumann, 1984).

Three different types of context clues are frequently distinguished:

d) Semantic or Meaning Clues. There are general semantic clues. For example, when reading a story about cats, good readers develop the expectation that it will contain words associated with cats, such as *tail*, *purr*, and *whiskers*. Sentence context clues are more specific.

In the sentence "My cat likes to _____," given the sentence context and what most of us know about cats, words like *play*, *jump*, and *scratch* seem reasonable.

e) Syntactic or Word Order Clues. In the previous example, the order of the words in the sentence indicates that the missing word must be a verb. Other parts of speech, such as adjectives (*nice, brown*) or nouns (*man, fence*), make no sense or don't result in what sounds like a real sentence.

f) Picture Clues. Illustrations can often help with the identification of a word. In the example, if a picture of a cat leaping through the air accompanies the text, *jump* seems a very good possibility. Context clues are often helpful, but they often are not specific enough to predict the exact word. Often several choices are possible, as in the example given. However, when context clues are combined with other clues such as phonics and word-part clues (for example, the sounds associated with *j* and *mp*), accurate word identification is usually possible. Context clues allow readers to "crosscheck" their identification of words. For example, a reader encountering the word *scratch* for the first time should look carefully at the letters of the word, apply what he or she knows about phonics and word parts, and check to be sure that an attempted pronunciation matches the letter clues.

g) Word Structure Clues

There are many groups of letters that occur frequently in words. These are generally perceived by more mature readers as clusters of letters. Among these letter groups are prefixes (*un-, re-, in-*), suffixes (*-ful, -ness, -est*), and inflectional endings (*-ed, -ing, -es*). Common prefixes, suffixes, and inflectional endings should be pointed out to students. Being able to associate sounds with a cluster of letters leads to more rapid, efficient word identification.

h) Analogy Clues

As readers build an increasing store of words that they can recognize with little effort, they use the words they know to help them recognize words that are unfamiliar. For example, a child who has seen the word *will* many times and who knows the sound associated with the consonant *w* will probably have little difficulty recognizing the word *fill*. Building phonemic awareness for onsets and rhymes builds a foundation for being able to identify simple words and syllables by analogy.

3.1.6 Strategies for reading fluency:

Reading fluency refers to how accurately and smoothly a person reads a passage of written text. A fluent reader is able to read quickly without stopping to decode individual words. Fluent readers use expression in their voices as they read, because they can focus on the meaning and intent behind the words. Many activities and teaching strategies help students increase their fluency. Fluency in oral reading refers to the ability to read connected text aloud with accuracy, speed, and appropriate phrasing.

a) Accuracy

When Word Recognition becomes automatic, a reader can dedicate more cognitive resources to understanding what he or she is reading. Conversely, when a reader has to spend time decoding words, that reader is devoting cognitive resources to Word Analysis instead of comprehension. Fluency, is measured by the reading rate (or speed), and if it is frequently poor, consequently, the comprehension may be poor.

The aim of all reading instruction is to increase the level of Silent Reading Comprehension. In order to be able to devote attention to the meaning of sentences and paragraphs, learners have to be fluent readers. Hesitations caused by a need to decode unfamiliar words interrupt the flow of the author's intended meaning. Fluent reading requires that, word reading ability be automatic for the particular reading level being assessed. Researchers have found high correlations between oral reading Fluency and reading comprehension.

b) Word Patterns

The use of familiar letter groupings to help recognize parts of words.

c) Word Parts

The use of root words, suffixes, prefixes, and other word parts to recognize a word.

3.1.7 Strategies for Reading Comprehension

a) Monitoring comprehension

Students who are good at monitoring their comprehension know when they understand what they read and when they do not. They have strategies to "fix" problems in their understanding as the problems arise. Research shows that instruction, even in the early grades, can help students become better at monitoring their comprehension.

Comprehension monitoring instruction teaches students to:

- Be aware of what they do understand
- Identify what they do not understand
- Use appropriate strategies to resolve problems in comprehension

b) Metacognition

Metacognition can be defined as "thinking about thinking." Good readers use metacognitive strategies to think about and have control over their reading. Before reading, they might clarify their purpose for reading and preview the text. During reading, they might monitor their understanding, adjusting their reading speed to fit the difficulty of the text and "fixing" any comprehension problems they have. After reading, they check their understanding of what they read.

Metacognition is a three-part process (Fogarty 1994). To be successful thinkers, students must:

1. Develop a plan before reading.
2. Monitor their understanding of text, use —fix-up strategies when meaning breaks down.
3. Evaluate their thinking after reading.

c) Planning

Good readers plan before reading, and learn the steps needed to accomplish this task. Through modeling and practice, teach them to:

- Think about the text's topic.
- Think about how text features can help in understanding the topic.
- Read the title and author, front and back cover blurbs, and table of contents.

- Study illustrations, photos, and graphics, including labels and captions.
- Skim for boldfaced words, headings and subheadings, and summaries.
- Think about what they know, what connections they can make, and what questions they might want answered.

Think about the way the text might be organized, such as:

- cause and effect
- compare and contrast
- sequence of events o
- problem and solution o
- description
- a combination of these text structures

d) Monitoring During Reading

Good readers take charge of their reading by monitoring their own comprehension, and students need direct instruction on how and why to do this. The first step is recognizing whether or not confusion exists is by asking "Do I understand what I just read? or What does the author really want me to know about this text?" Readers who take responsibility for their own comprehension, constantly question the text and their reactions to it.

Other ways that readers monitor comprehension during reading are to:

- make connections
- make predictions
- make inferences
- use context clues
- use text features
- identify text structures
- use graphic organizers to pinpoint particular types of text information
- write comments or questions on self-stick notes or in the margins

Readers become confused during reading for a variety of reasons (Tovani 2000):

1. The voice inside the reader's head is not talking to him any longer about the text. It may simply be reciting the text.
2. The reader's mind begins to wander; he is no longer reminding himself to —pay attention.
3. The reader can't remember what has been read.
4. The reader can't answer his own questions.
5. The reader re-encounters a character but does not remember how or when the character was introduced in the story.

e) Evaluating

When good readers finish reading, they reflect on the strategies they used to determine whether their plan worked or whether they should try something else next time.

3.2 Writing

Writing can be difficult and time consuming for many students, but like any complex job, writing is easier, if you have the right tools. Writing strategies are the tools writers use to do their work. Like all learning problems, difficulties in writing can be devastating to a child's education and self-esteem. As children progress through school, they are increasingly expected to express what they know about many different subjects through writing. If a child fails to develop certain basic skills, he will be unable to write with the speed and fluency required to excel, as these demands increase. Indeed, for a child struggling with a writing problem, the writing process itself interferes with learning. Students facing such difficult odds have trouble staying motivated.

Writing problems rarely occur in isolation, and improvements in writing go hand in hand with the development of other non-writing-specific skills. Thus, a problem with the development in one of these areas is likely to interfere with a child's progress as a writer.

Individuals with written language disorders may have difficulty with one or more aspects of written language such as proper use of grammar and

syntax, punctuation, spelling, organizational skills, and initiating writing. The physical act of handwriting for persons with dysgraphia can make the task of writing even more complicated. Assistive technology can help with written expression as well as the physical act of putting words onto the paper. This section will address both of these concerns separately, but often individuals with learning disabilities will have problems in both areas.

3.2.1 Nature of the Writing Process

Writing is a complex process that allows writers to explore thoughts and ideas, and make them visible and concrete. Writing encourages thinking and learning. It motivates communication and makes thought available for reflection. When thought is written down, ideas can be examined, reconsidered, added to, rearranged, and changed. Writing is most likely to encourage thinking and learning when students view writing as a process. By recognizing that writing is a recursive process and that every writer uses the process in a different way, students experience less pressure to "get it right the first time" and are more willing to experiment, explore, revise, and edit. Furthermore, students need to —write in the language through engaging in a variety of grammar practice activities of controlled nature. Finally, they need to begin to write within a framework —flexibility measures that include: transformation exercises, sentence combining, expansion, embellishments, idea frames, and similar activities.

3.2.2 Developmental writing stages:

Stage 1

Novice Writer (unskilled, unaware, teacher-dependent writer)

- has little, if any, individual style
- has little awareness of writing process
- has undeveloped skills and techniques
- seeks approval from teacher
- is reluctant to revise any writing
- believes good writing comes easily

Stage 2

Transitional Writer (transitional, self-involved, self-delineating writer)

- needs support and coaching in order to develop
- learns from modeled behaviors
- is developing a degree of comfort with the craft
- is anxious to stand alone, yet is uncomfortable with peer collaboration
- is developing an awareness of personal needs, interests, and preoccupations

Stage 3

Willing Writer (peer-involved, willing writer)

- is able to collaborate well with others
- requires external feedback to shape progress
- is able to profit from criticism
- is developing objectivity concerning work
- enjoys practicing craft
- is developing a sensitivity to audience

Stage 4

Independent Writer (independent, autonomous writer)

- makes highly objective self-assessments
- has developed a sophisticated personal style
- has developed a writer's voice
- takes risks and experiments
- is self-motivating and self-aware as a writer
- is a craftsperson

3.2.3 Difficulties in written expression:

❖ Poor handwriting/writing illegibly:

- does not follow lines on paper .
- writes too small or too large .
- writes too light or too hard
- pencil grip incorrect
- does not visually track writing

- Writes letters or numbers backwards or upside down (especially when tired) .

- Mixes capital and lower case letters inappropriately

- Unfinished or omitted words.

❖ Poor spelling skills:

- spells phonetically and cannot remember patterns

- spells words differently in the same document (School, for example, may appear as skool, shoocl, skchool)

- reverses letters in spelling

❖ Difficulty with copying or completing work on a printed page:

- difficulty copying from a board

- difficulty copying from a book or other printed material

- difficulty filling out forms

- difficulty completing bubble answer sheets

- difficulty completing fill-in-blank worksheets

❖ Difficulty taking notes from oral presentation:

- unable to write homework assignments correctly .

- writing is too slow to get lecture points on paper

- takes notes but unable to distinguish important information from extraneous information .

- reverses or ignores numbers, parts of sentences, and/or whole words when taking notes

❖ May have problems with grammar, syntax and organization:

- demonstrates inconsistent memory for sentence mechanics (e.g., lack of punctuation and capitalization)

- persistent problems with sentence structure (sentences may be incomplete or syntax may be incorrect or disassociated)

- does not have all parts of a well organized paragraph (topic and supporting sentences, transitional sentence)

- difficulty with syntax (forming sentences or phrases) and grammar (using rules to write sentences)

- ❖ **Demonstrates writing skills inconsistent with verbal abilities:**
 - writes short and/or simple essays even though he can verbalize more complex thought
 - can verbalize answers to tests but written answers are wrong, left blank, or incomplete
 - oral vocabulary more complex than written vocabulary
 - Difficulty thinking and writing at the same time.

3.2.4 Principles for teaching writing

The following are a few principles that every teacher should consider while planning a writing course, or a course in which writing will play a significant part. These principles can (and should) be adapted to the many different learning situations:

1. Understand your students' reasons for writing:

Dissatisfaction with writing instruction comes when the teacher's goals does not match the student's, schools or institutions goal in which the student works. It is important to understand both and to convey goals to students in ways that make sense to them. Does the curriculum include a lot of personal writing? What benefit do you think it has? How do the skills learned in personal writing apply to other types of writing? Answering these questions will help the teacher to find a focus for the writing that is to be done.

2. Provide many opportunities for students to write:

Writing always improves with practice. Not every piece of writing needs to be corrected or graded. Integration of practice writing sessions into the syllabus, makes the student become more comfortable with the act of writing. Practice writing should provide students with different types of writing as well. Short responses to a reading, journal entries, letter writing, summaries, poetry or any type of writing that is considered useful in the class should be practiced.

3. Make feedback helpful and meaningful:

Students crave feedback on their writing, yet it doesn't always have the intended effect. If the teacher writes comments on students' papers, it should be ensured that they understand the vocabulary or symbols that are used. Caution should be taken about the tone of the teachers' comments. The margins of a paper may be small and can force the teacher into short comments. When writing short comments, one tends to leave out the words that soften the message. While a teacher may think, —I'm not sure I understand your point here, the limited space may cause the teacher to write simply, —UNCLEAR or just —?. Students may see comments such as these as unkind and unhelpful. Feedback need not always be written in the margins.

4. Clarify how the students writings will be evaluated.

Students often feel that the evaluation of their writing is completely subjective. One way to combat this feeling is to develop a statement about what is valued in student writing. A scale may help in resolving the issue of subjectivity.

1. On a scale of 1–10, how important is creativity, or originality of ideas?
2. On a scale of 1–10, how important is following a particular written format?
3. On a scale of 1–10, how important is grammatical accuracy?
4. On a scale of 1–10, how important is it that the assignment includes recently taught material?
5. On a scale of 1–10, how important is accuracy in spelling and punctuation?

Answering on these scales will help the teacher to develop a **rubric**, which is a kind of scoring grid that elaborates the elements of writing that are to be evaluated. This rubric should outline the weight of grammar and mechanics in relationship to content and ideas, as well as other features of writing that the teacher find important. There are three general types of rubrics that can be developed for assignments:

a) Non-weighted rubric

This type of rubric provides descriptions of writing quality by level across other writing criteria, as excellent adequate inadequate. With this type of rubric, the teacher could circle or check the level the student had achieved and then provide some written comments on the bottom of the page, or on the student's assignment.

b) Weighted rubric:

A weighted rubric is similar to the unweighted one, but it breaks the writing skills into categories and sub-categories.

c) Holistic rubric:

A holistic rubric describes in general terms the qualities of excellent, good, fair, and unsatisfactory assignments. These descriptions can be linked to grades or stand on their own. The instructor then chooses the description that fits the assignment.

3.2.5 Strategies in writing

Writing strategies are deliberate, focused ways of thinking about writing. A writing strategy can take many forms. It can be a formal plan a teacher wants students to follow to write a report of a project, or it can be something as simple as a trick to remember how a word is spelled. Getting a child with a unique learning style to write, can be a difficult process, especially if he/she has a learning disability. Strategies for such children will have to be planned with a lot of caution. Plans should be crafted prescriptively based on the needs of the impaired student. With accurate diagnosis and proper intervention, dysgraphia is a learning disability that can be effectively remediated. The teacher can provide support to children with dysgraphia in a number of ways:

- ❖ **Accommodation** - Provide alternative options to written expression.

Eg. Temporarily allow student to take oral rather than written quizzes and exams.

- ❖ **Modification** - Alter expectations or modify tasks to avoid the area of weakness.

Eg. Don't judge written assignments on neatness of handwriting.

- ❖ **Remediation** - Provide direct explicit instruction to improve handwriting skills.

Eg. Use multi-sensory techniques for teaching handwriting.

Dysgraphia is a learning disability that causes individuals to experience difficulty when expressing their thoughts in writing and graphing. Students who have dysgraphia typically have problems with sequencing which causes them to frequently reverse letters and numbers, write words backwards, write letters out of order, or have sloppy handwriting. In order to prevent the errors in sequencing, individuals with dysgraphia are encouraged to slow down when writing, in order to write more accurately. However, this may cause them to lose their thoughts and ideas while writing, which is a source of frustration for students with dysgraphia. The symptoms of dysgraphia include strong verbal skills but poor writing skills, random punctuation and spelling errors, illegible writing, unfinished words or letters, cramped or unusual grip, labored copying or writing, or inconsistencies within the writing (print/cursive, upper/lower case). There are two different approaches to address dysgraphia, remedial treatment which uses systematic techniques to improve functioning and bypass strategies which use different forms of technology to alleviate the problem with handwriting.

3.2.5.1 Identify a strategy worth teaching

Identifying strategies worth teaching means looking for strategies that will help them overcome their writing difficulties. Additional insight can be gained by studying student papers to infer where writers are having difficulty and by observing writers at work.

3.2.5.2 Introduce the strategy by modelling it

Introducing strategies by modelling them generally means some form of composing out loud in front of students. The teachers speak their thoughts while writing, calling particular attention to the strategy they are recommending for students. Sometimes they ask students to contribute to the writing the teacher is doing, to copy the writing for them, or to compose a similar piece of writing in connection with the writing the teacher is doing.

3.2.5.3 Scaffold students' learning of the strategy

Scaffolding is the learning of a writing strategy means helping students to try the strategy with teacher assistance. It is also ideal for conferring with individuals and for setting up partnerships and peer groups so that students can assist each other in the learning of strategies. In-class writing with teacher assistance is also necessary to make sure that writers practice using the strategy being taught.

3.2.5.4 Repeated practice and reinforcement:

Helping students to work toward independent mastery of the strategy through repeated practice and reinforcement means giving them opportunities to use the strategy many times with decreasing amounts of assistance each time. The idea here is that, it is better to teach a few key writing strategies well than it is to teach many of them insufficiently.

3.3 Maths skills

Mathematics is often thought of as a subject that a student either understands or doesn't, with little in between. In reality, mathematics encompasses a wide variety of skills and concepts. Although these skills and concepts are related and often build on one another, it is possible to master some and still struggle with others. For instance, a child who has difficulty with basic multiplication facts may be successful in another area, such as geometry. An individual student may have some areas of relative strength and others of real vulnerability.

In recent years, researchers have examined aspects of the brain that are involved when children think with numbers. Most researchers agree that memory, language, attention, temporal-sequential ordering, higher-order cognition, and spatial ordering are among the neurodevelopmental functions that play a role when children think with numbers. These components become part of an ongoing process in which children constantly integrate new concepts and procedural skills as they solve more advanced math problems.

For children to succeed in mathematics, a number of brain functions need to work together. Children must be able to use memory to recall rules and formulas and recognize patterns; use language to understand

vocabulary, instructions, and explain their thinking. The use of sequential ordering to solve multi-step problems and use procedures is also common. In addition, children must use spatial ordering to recognize symbols and deal with geometric forms. Higher order cognition helps children to review alternative strategies while solving problems, to monitor their thinking, to assess the reasonableness of their answers, and to transfer and apply learned skills to new problems. Often, several of these brain functions need to operate simultaneously.

Disabilities involving math vary greatly. So, the effects they have on a person's development can vary just as much. For instance, a person who has trouble processing language will face different challenges in math than a person who has trouble with visual-spatial relationships. Another person may have trouble remembering facts and keeping a sequence of steps in order. This person will have a different set of math-related challenges to overcome. For individuals with visual-spatial troubles, it may be hard to visualize patterns or different parts of a math problem. Language processing problems can make it hard for a person to get a grasp of the vocabulary of math. Without the proper vocabulary and a clear understanding of what the words represent, it is difficult to build on math knowledge. When basic math facts are not mastered earlier, teens and adults with dyscalculia may have trouble moving on to more advanced math applications. These require that a person be able to follow multi-step procedures and be able to identify critical information needed to solve equations and more complex problems.

3.3.1 Learning disabilities in mathematics:

Children facing dyscalculia have difficulty in learning mathematics. This disorder results out of the harm caused to certain parts of brain. However, the IQ level of such children is normal. Dyscalculia is also referred as arithmetic difficulty. Children facing this disorder may also have difficulty with calculating time and measurements. Though, such children have problem with calculations they are good at other academic subjects. Children coping with dyscalculia may also have good writing, reading and speaking skills.

Dyscalculia (or math disability) is a specific learning disability involving innate difficulty in learning or comprehending simple arithmetic. It is akin to dyslexia and includes difficulty in understanding numbers,

learning how to manipulate numbers, learning maths facts and a number of other related symptoms (although there is no exact form of the disability). Math disabilities can also 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, genetic or developmental origin.

Dyscalculia is a broad term for severe difficulties in math. It includes all types of math problems ranging from the inability to understand the meaning of numbers, to the inability to apply math principles to solve problems. Dyscalculia is one type of learning disability that can be served in special education programs.

Neglect might lead parents and teachers to believe that arithmetic learning problems are not very common, or perhaps not very serious. Math deficits are widespread and in need of equivalent attention and concern. The effects of math failure throughout years of schooling, coupled with math illiteracy in adult life, can seriously handicap both daily living and vocational prospects. In today's world, mathematical knowledge, reasoning, and skills are no less important than reading ability.

3.3.2 Types of dyscalculia

Dyscalculia is observed in children in many different types and subtypes. Here are some types of dyscalculia.

3.3.2.1 Developmental dyscalculia

a) Acalculia

Dyscalculia which occurs during the later stages of life is known as acalculia. It is acquired due to injuries to brain or stroke. Due to this disorder a person is unable to carry out normal mathematics like addition, subtraction, division and multiplication. It is different form of dyscalculia as it is not acquired during normal stage of learning.

b) Verbal dyscalculia

In this type of dyscalculia a child may be able to carry out normal mathematical calculations. However child is not able to verbally name the symbols, signs or counting of the numbers and different items.

c) Operational dyscalculia

Operational dyscalculia is a problem associated with memorizing the rules of mathematics. It is also associated with difficulty in applying rules during mathematical operations. It also related to the confusion in mathematical symbols

d) Sequential dyscalculia

As the name suggests, this disorder refers to disability to count numbers according to sequence. The child also has problem with calculating time, checking schedule, tracking direction and taking measurement.

3.3.3 Strategies for Mathematics:

For overcoming dyscalculia parents should possess lots of patience and positive attitude. This is required as it is an ongoing process involving hard work throughout. This is a very sensitive process, therefore children need support and encouragement to improve. Given below are a few strategies that will be helpful in remediating maths difficulties.

a) Identifying strengths and weaknesses

Analyze the strengths and weaknesses of the child in the beginning. Initially work more on the core strengths and later on try to reduce the weaknesses. Help the child to realize his or her strengths and teach your child to think positively. Use the strengths of the child in such a way, that it helps him or her to grasp easily.

b) Adopting new techniques for teaching

Find out the interests of the child. Try to teach the child in direction of his or her interest. For example if the child likes drawing ask him to draw the mathematical signs in different colours. This will help the child to identify the signs easily. Use big charts, pictures and diagrams etc to represent numbers. Audio and video CDs will make learning easier and fun. The best way of teaching is teaching the child, right from the basic level.

c) Regular Practice

Once the strengths, weakness and interests of the child are identified, chalk out a proper plan. Design a strategy for training the child. This strategy should be exercised regularly. This will help the teacher to keep track and mark the improvements in the child. Consistency and regular practice are the keys to the improvement of the child. Set a goal and have a strong will to complete it. Having such an attitude, will positively help the teacher to bring development in the child. Every child has problems with this subject somewhere or the other. However correcting it at the right time will make the child's future bright.

d) Repeated reinforcement

Repeated reinforcement and specific practice of straightforward ideas can make understanding easier.

3.3.4 Other strategies to be followed inside and outside the classroom include:

- Use graph paper for students who have difficulty organizing ideas on paper.
- Work on finding different ways to approach math facts, i.e., instead of just memorizing the multiplication tables, explain that $8 \times 2 = 16$, so if 16 is doubled, 8×4 must = 32.
- Practice estimating as a way to begin solving math problems.
- Introduce new skills, beginning with concrete examples and later moving to more abstract applications.
- For language difficulties, explain ideas and problems clearly and encourage students to ask questions as they work.
- Provide a place to work with few distractions and have pencils, erasers and other tools on hand as needed.
- Matching of same items and grouping of objects.
- Recognizing groups of objects , without counting.
- Counting (matching numerals to objects).
- Naming a number that comes after a given number
- Writing numeral from 0-10 getting the sequence correct, overcoming distortions, reversals.

- Allow use of fingers and scratch paper.
- Use diagrams and draw math concepts.
- Provide peer assistance.
- Suggest use of graph paper.
- Suggest use of coloured pencils to differentiate problems.
- Work with manipulatives.
- Draw pictures of word problems.
- Use mnemonic devices to learn steps of a math concept.
- Use rhythm and music to teach math facts and to set steps to a beat.
- Measuring and pairing, estimating, approximations, putting objects one –to one correspondence.
- Sequential values (arranging like objects in order by quantitative differences)
- Relationships of parts to whole and parts to each other. This will involve experimentation with experiments and materials to discover numerical relationships.
- Operations, manipulations of number facts to 10 without reference to concrete objects.
- Work extra hard to 'visualize' math problems. Maybe even draw yourself a picture to help understand the problem.
- Take extra time to look at any visual information that may be provided like picture, chart, graph, etc.
- Read the problem out loud and listen very carefully. This allows you to use your auditory skills which may be strength.
- Ask to see an example.
- Ask for or try to think of a real-life situation that would involve this type of problem.
- Do math problems on graph paper to keep the numbers in line.
- Ask for uncluttered worksheets so that you are not overwhelmed by too much visual information.
- Decimal system enables learning the system of numeration and notation beyond 10 and base.

3.3.5 Areas of intervention

The following are the areas of intervention in mathematics:

- Pre number skills,
- Numeration and place value,
- Concepts,
- Computation,
- Measurement,
- Problem solving,
- Reasoning.

a) Pre number skills:

Early development of number concepts is critical in developing positive attitudes about mathematics at an early age. Special methods and activities will assist children to develop early numeracy skills. These methods will need to include the use of motivating and engaging concrete materials that children can manipulate. Young children need to experience a lot of 'doing' and 'saying' before written numerals will make sense to them.

Pre number skills involve:

- One to one correspondence involves the matching of one object to another. This skill leads to a better understanding of numeration and representation.
- Classification refers to the ability to group or sort objects based on one or more property. Eg. size, color , shape , texture , design.
- Seriation means, being able to recognize the common attributes of objects. But, it is required to determine the extent to which the object possesses the attribute. Serial order and relationships can be taught by giving objects of varying lengths, heights, sizes of rings, pegs, filling the same size jars with varied amount of water or sand and ask the students to put them in order.

b) Numeration and place value

This focuses on understanding numerals, number value (greater and smaller), estimation (number sense), place value, understanding regrouping, applying mathematics concepts to everyday situations,

understanding the concept of zero. This can be done using number-value associations, using colour cues, spoken numerals with symbols, using abacus, play money, beans, and rulers. Use puzzles, form boards and pegs to understand shapes and spatial relations. Use sand, water from one container and put into another to understand the concept of measurements, estimate quantities, use of measuring cups. Teach about fractions using equipments like half gallons, etc.

Classification is a pre-number concept that children need lots of experimentation and communication with. We classify on a regular basis without even considering what we are actually doing. We look in indexes that are alphabetized or numerically arranged. We purchase groceries in areas of food groups, we classify to sort laundry. We sort our silverware before putting it away. Children can benefit from a variety of classification activities which will also support early numeracy concepts.

c) Concepts

Conceptual understanding on division and multiplication can enhance learning. Providing live situations can have a far reaching impact. Explanation like continued addition is multiplication can further prove beneficial.

d) Estimation

Estimation helps you focus on what is really going on. It is important for you to be able to estimate how many things you can see, or how long something is or how big something is besides maths calculations. Utilizing estimating skills can also help students with dyscalculia. By estimating, the student is encouraged to think about the problem as a whole, to obtain an answer. Specific skills can then build from this.

e) Computation skills

Many problems in arithmetic are due to deficiencies in basic computation skills. The student's problem should be evaluated with reference to underlying deficits in learning processes; verbal, spatial, perceptual, or memory factors. Students should be taught the basic skills of mathematics computation that they lack, including addition, subtraction, multiplication, division, fractions, decimals and percentages.

f) Measurement

Measurement as a concept should be concretized. Live demonstrations benefit all learners. It helps in understanding units of measurement in different states of matter. Conversion of units however would require a repeated practice. Teach till mastery and work towards maintenance in a hierarchical manner. Problem solving and reasoning as a skill has been dealt with in the unit of thinking skills separately.

Check your progress

Notes: a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

4. What are reading skills?

5. What is meant by metacognition?

UNIT 4 Curricular Adaptation, IEP, Further Education

Objectives

After going through this block, you will be able to:

- Define curricular adaptation.
- Write IEP
- Reduce barriers to curricular adaptations.

4.1 Curricular Adaptation for Children with Learning Disabilities

The effective inclusive school requires reflective teachers who are willing to change their attitudes, teaching and classroom management practices, and curriculum to accommodate individual learner needs. In inclusive classrooms, teachers are reflective practitioners who are flexible, responsive and aware of learners' needs. They think critically

about their values and beliefs and routinely examine their own practices for self-improvement and to ensure that learners' needs are met. Teachers individualize education for all learners in terms of assessment techniques, curriculum accessibility, teaching strategies, technology, physical design (environment) adaptations and a wide array of related services based on their needs.

Curriculum adaptations refer to modifications that relate specifically to instruction or content of a curriculum and any adjustments to learning, teaching and assessment environment, assessment techniques that enhance a learner's performance or allow at least partial participation in learning activity, structured learning programmes and assessment. Adaptations involve changes to the curricular content, changes to the conceptual difficulty level of the curriculum or changes to the instructional objectives and methodology. On the other hand, curriculum adaptations imply actions at the classroom and teacher level. It is to take the curriculum and adjust it to fit the needs or to modify and use existing materials for insertion in a regular curriculum for very specialized reasons.

Factors that influence curriculum adaptations

- Academic deficits
- Language deficits
- Social-emotional problems
- Attention Deficit Hyperactivity
- Memory deficits
- Cognitive deficits
- Meta-cognitive deficits
- Perceptual differences
- Motor skills and coordination problems

For adaptations to be done, it is not necessary for a learner to show all the above mentioned manifestations of learning impairments. When a learner displays some of them, adapting the curriculum would result. After a learner has been identified as having one or more of these

manifestations, there needs to be a process which will inform curriculum adaptations

4.2 Individualised Education Programme (IEP) for Children with Learning Disabilities

Individual Education Programme (IEP) is an educational programme which is designed for those students with disabilities, in order to help them to learn as per their abilities, and to include them in the formal education system. Each school should have Individual Education Programme.

An IEP defines a child's special education program. It includes the disability under which the child qualifies for special education services. The school shall provide the services recommended by the IEP team. The short term and long term goals and objectives and any specific accommodations for the child's learning are also determined by the team.

Generally, IEPs are reviewed and updated once a year but can be revisited more frequently if the need arises due to unforeseen circumstances or concerns from parents, teachers or other school personnel.

IEP teams includes teachers from both in the special education or the general education program, as well as counsellors, therapists, parents and students themselves.

The goals for each student with a particular disability are set by the IEP team members after a discussion among them. The goals are evaluated periodically to check the achievement.

To establish these goals and ensure that the student meets them, the IEP must first determine the student's present level of performance. Identifying how well a student is doing currently can give the IEP team a reference point to draw from while establishing student goals on the plan.

The IEP will also outline the services your child requires to function optimally in school. If your child has a language disorder, for example, one service he needs might be a few 20-minute sessions of speech therapy per week.

Remember that the input of parents is just as important as the input of the school faculty members on the IEP. If there are certain goals you'd like your child to achieve or services you think your child needs, don't hesitate to advocate for your child. If you and the faculty disagree, a special education advocate, lawyer or another professional with special education expertise can walk you through the next steps.

Check your progress

Notes: a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

6. What is curricular adaptation?

7. What are the factors affecting curricular adaptation?

UNIT 5 Transition Education, Life Long Education

Objectives

After going through this block, you will be able to:

- Teach/train students with learning disabilities for transition to next level.
- Prepare students with learning disabilities for life long 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 school to young adulthood.

The 1997 amendments to the Individuals with Disabilities Education Act (IDEA), US defined transition services for this particular transition as: a coordinated set of activities for a student, with a disability, that: (a) is designed within an outcome oriented process, 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 student's needs, taking into account the student's preferences and interests; (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.

This concept is straight forward and fairly simple, including three major components. 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 school services, support, and programs need to be identified and made before the student exits high school.

Importance of Transition Planning for Individuals with LD

Even though transition planning has been mandated for all students with disabilities 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 difficulty. 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, satisfaction with employment, postsecondary academics, and functional skills.

Transition Planning Areas or Domains

Clark and Patton (1997) examined the transition guides of 17 states in order to identify core transition planning areas. They noted that although there was interstate variation in transition planning areas, a common core of important planning areas emerged. Transition planning domains that were included in more than half of the state guides they examined were:

- community participation
- daily living
- employment
- financial/income management
- health
- independent living (include living arrangements)
- leisure/recreation
- postsecondary education
- relationship/social skills
- transportation/mobility
- vocational training

Special Considerations for Youth with LD

Several special factors need to be considered in the transition planning for students with LD. One of these factors is the drop-out rate. Students with LD are at great risk for dropping out of school. Recent drop-out estimates for this population range from 17% to 42%. Dropping out causes numerous consequences relating to job opportunities, income, and self-esteem. Within the student with LD population, those students most at risk for dropping out are boys from urban communities and low-income homes who are racial minorities. Such students should receive intensified support, and their progress should be monitored.

Another critical factor in transition planning for students with LD is individualized planning that matches a student's post high school goals. Because, the population of students with disabilities is so heterogeneous as a wide range of postsecondary goals and transition planning should be considered. For some students, the next step after high school will be employment, for other students it will be further career or technical training, and for few others it will be attending a 4-year college or university. In order to be successful in the post-high school environment, these students must be provided with appropriate training and experiences. For example, for a student whose postsecondary goal is attending a university, the high school curriculum must include participation in college preparatory courses and the development of independent study skills. For a student whose postsecondary goal is employment, the high school curriculum must include participation in career/technical education courses and work experiences. For all students, the curriculum should include the development of self-determination skills, social and interpersonal skills, community integration and participation skills, and independent living skills, if appropriate.

A final critical aspect of transition planning for students with LD is self-determination, which has been defined as "one's ability to define and achieve goals based on a foundation of knowing and valuing oneself". It is highly related to positive adult outcomes. For example, Wehmeyer and Schwartz (1995) found that, students with high levels of self-determination were more likely to be employed for pay, have a savings or checking account and have expressed an interest in living outside of the home. Skills related to self-determination include self-evaluation, self-awareness, self-knowledge, self-management, choice making, decision making, problem solving, goal setting and attainment, and social collaboration.

Check your progress

Notes: a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

8. What are the problems in writing expression?

9. Mention the areas/domains of transition planning.

LET US SUM UP

Fundamental concepts such as definitions, types and characteristics of learning disabilities are basic for your career development in the field of special education particularly education of children with learning disabilities. Further, you learned about the tools of assessment of various types of learning disabilities. The teaching strategies for reading, writing and arithmetic related learning disabilities were discussed in this unit. This unit described the curricular adaptation and transition education for learning disabilities which will enable you to understand the importance of education to the children with learning disabilities.

GLOSSARIES

Acalculia: Dyscalculia which occurs during the later stages of life is known as acalculia.

Accommodation: Provide alternative options to written expression.

Curricular adaptation: modifications that relate specifically to instruction or content of a curriculum and any adjustments to learning, teaching and assessment environment, assessment techniques that enhance a learner's performance or allow at least partial participation in learning activity, structured learning programmes and assessment.

Dyscalculia: difficulty performing maths calculations.

Dysgraphia: difficulty in writing.

Dyslexia: difficulty in speaking and reading a language.

Dyspraxia: It refers to a variety of difficulties with motor skills.

IEP: Individualised Education Programme.

ANSWERS TO CHECK YOUR PROGRESS

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

2. When a child has a learning disability, he or she may exhibit the following characteristics:
 - Have trouble learning the alphabet, rhyming words, or matching letters to their sounds
 - Make many mistakes when reading aloud, and repeat and pause often
 - Not understand what he or she reads

3. National Institute of Mental Health and Neurosciences (NIMHANS).

4. Reading skills enable readers to turn writing into meaning and achieve the goals of independence, comprehension, and fluency. Reading skill are specific abilities which enable a reader to:
 - Read the written form as meaningful language
 - Read anything written with independence, comprehension and fluency
 - Mentally interact with the message.

5. Metacognition is called ‘thinking about thinking’.

6. Curriculum adaptations refer to modifications that relate specifically to instruction or content of a curriculum and any adjustments to learning, teaching and assessment environment, assessment techniques that enhance a learner's performance or allow at least partial participation in learning activity, structured learning programmes and assessment. Adaptations involve changes to the curricular content, changes to the conceptual difficulty level of the curriculum or changes to the instructional objectives and methodology. On the other hand, curriculum adaptations imply actions at the classroom and teacher level. It is to take the curriculum and adjust it to fit the needs or to modify and use existing materials for insertion in a regular curriculum for very specialized reasons.

7. Factors that influence curriculum adaptations

- Academic deficits
- Language deficits
- Social-emotional problems
- Attention Deficit Hyperactivity
- Memory deficits
- Cognitive deficits
- Meta-cognitive deficits
- Perceptual differences
- Motor skills and coordination problems

8. The problems in writing expression are:

- Poor handwriting/writing illegibly
- Poor spelling skills
- Difficulty with copying or completing work on a printed page
- Difficulty taking notes from oral presentation
- May have problems with grammar, syntax and organization
- Demonstrates writing skills inconsistent with verbal abilities

9. The areas/domains of transition planning are:
- community participation
 - daily living
 - employment
 - financial/income management
 - health
 - independent living (include living arrangements)
 - leisure/recreation
 - postsecondary education
 - relationship/social skills
 - transportation/mobility
 - vocational training

SUGGESTED READINGS

- Marker, P. (2020). 5 learning disabilities that teachers should look out for among students. *India Today*. December, 25. <https://www.indiatoday.in/education-today/featurephilia/story/5-learning-disabilities-that-teachers-should-look-out-for-among-students-1753104-2020-12-25>
- Pennington, B. F., McGrath, L., & Peterson, R. L. (2020). Diagnosing learning disorders, 3rd Ed. The Guilford Press.
- Routley, C. (2019). Special Learners in School: Understanding Essential Concepts. Routledge.
- Sternberg, R., & Swerling, L. S. (2019). Perspectives on learning disabilities: Biological, cognitive, contextual. Routledge.
- Jones, V., & Laurelut, M. H. (2019). Working with people with learning disabilities. Springer.
- Selznick, R. (2019). What to do about dyslexia: 25 Essential points for parents. Sentient Publications.
- Johnson, E. S., Clohessy, A. B. (2014). Identification and evaluation of learning disabilities. Sage.

- Moyes, R.A. (2010). Building Sensory Friendly Classrooms to Support Children with Challenging Behaviors: Implementing Data Driven Strategies, Sensory World, Texas.
- Simpson, R. L., & Myles, B. S. (2008). Educating Children and Youth with Autism: Strategies for Effective Practice. (2nd edition) Pro Ed. Texas.
- Higgins, J. (2003) Practical Ideas that Really Work for Students with Dyslexia and Other Reading Disorders, PRO-ED, Austin.
- Smith, D.D. (2003). Introduction to Special Education Teaching in an Age of opportunity, Allyn & Bacon.
- Pierangelo, R., & Giuliani G.A. (2003). Transition services in Special Education, Allyn & Bacon.
- Reddy G.L., & Rama, R. (2000). Education of Children with Special Needs, New Delhi - Discovery Pub.
- RCI-FCECLD Study material of the Rehabilitation Council of India.
- RPwDAct2016.pdf
- RPWD-Handbook_-Spot-Color-for-printing-inside-pages Final Colour fnl.pdf - FINAL-Handbook-on-the-RPWD-Act-2016-ENGLISH.pdf



TAMIL NADU OPEN UNIVERSITY
SCHOOL OF SPECIAL EDUCATION AND
REHABILITATION

SED-15

INTRODUCTION TO NEURO DEVELOPMENTAL DISABILITIES

BLOCK

2

**INTELLECTUAL DISABILITY: NATURE, NEEDS AND
INTERVENTION**

Unit 6

Definition, Types and Characteristics

Unit 7

Tools and Areas of Assessment

Unit 8

Strategies for Functional Academics and Social Skills

Unit 9

**Assistive Devices, Adaptations, Individualized Education Plan,
Person Centered Plan and Life Skill Education**

Unit 10

Vocational Training and Independent Living

BLOCK 2 INTELLECTUAL DISABILITY: NATURE, NEEDS AND INTERVENTION

Block Structure

Introduction

Objectives

Unit 6 Definition, Types and Characteristics

 9.1 Definition of Intellectual Disability

 9.2 Types of Intellectual Disability

 9.3 Characteristics of Intellectual Disabilities

Unit 7 Tools and Areas of Assessment

 7.1 Madras Developmental Programming System (MDPS)

 7.2 Basic-MR (Behavioural Assessment Scale For Indian
 Children With Mental Retardation)

 7.3 Functional Assessment Checklist for Programming
(FACP)

 7.4 UPANAYAN—A Programme of Developmental
 Training

 7.5 Portage Guide To Early Education

 7.6 Functional Assessment Checklist For Programming (FACP-
 PMR)

Unit 8 Strategies for Functional Academics and Social Skills

Unit 9 Assistive Devices, Adaptations, Individualized Education
Plan, Person Centered Plan, Life Skill Education

 9.1 Individualised education plan (IEP)

Unit 10 Vocational Training and Independent Living

Let us Sum Up

Glossaries

Answers to Check your Progress

Suggested Readings

INTRODUCTION

This unit of Block-2 gives you definitions, types and characteristics of intellectual disabilities. The term Intellectual disabilities have become a legal term after replacing the term mental retardation in RPwD Act in 2016.

Intellectual disability (ID) is characterized by significant impairment in cognitive and adaptive behaviour. The term used to describe this condition has gone under constant change over the years due to social and political compulsions. The main reason to search for a new term is to find a least stigmatizing terminology. Thus, mental retardation, which was in use world over till late 20th century, has now been replaced with ID in most English speaking countries. Diagnostic and Statistical Manual 5th Revision (DSM-V) has replaced it with ID and the much anticipated 11th revision of International Classification of Disease is likely to do so. This unit will through some light on the definition, types, and characteristics of intellectual disabilities. Further, tools and areas of assessment, strategies for functional academics and social skills are discussed. Assistive devices, adaptations, IEP, Person Centred Plan, and life skill education for the PWID are explained. In addition, the need and importance of vocational training and independent living are presented with reference to the current scenario.

OBJECTIVES

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

- Define intellectual disability
- Describe the characteristics of persons with intellectual disability
- Understand the types of intellectual disability
- Describe the available tools for the assessment of intellectual disability
- Explain functional academics and social skills for persons with intellectual disability
- Justify the need for adaptation and IEP for PWID
- Discuss the importance of vocational training and independent living for PWID

UNIT 6 DEFINITION, TYPES AND CHARACTERISTICS

Objectives

After going through this block, you will be able to:

- Define intellectual disabilities.
- Distinguish various types of intellectual disabilities.
- Identify characteristics of intellectual disabilities.

6.1 Definition of Intellectual Disability

The term, *intellectual disability*, refers to a condition in which a person has certain limitations in intellectual functions like communicating, taking care of him or herself, and has impaired social skills. These limitations cause a child to intellectually develop more slowly than other children. These children may take longer to walk, talk, and take care of themselves than the typical, unimpaired, child. It's probable that children with intellectual disabilities will have difficulty learning in school.

In the past, experts and mental health professionals used the term *intellectual disabilities* to describe an intellectual disability and it was the term used in the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (DSM-IV). But over the past 20 years or so, mental health experts and other professionals have increasingly begun to use the term, *intellectual disability*. This term better describes the scope and reality of an intellectual developmental disorder and replaces the term *intellectual disabilities* in the new DSM-V.

Experts define intellectual disability as:

"...significantly sub-average general intellectual functioning, existing concurrently with deficits in adaptive behaviour and manifested during the developmental period, that adversely affects a child's educational performance." -Rosa's Law, signed by President Obama in October 2010.

Intellectual Disability (ID) is a term that describes individuals whose intelligence (thinking, reasoning, problem-solving abilities) and daily living skills are well below other people of the same age. Children with

ID learn and progress at a slower rate than typically developing peers. They may take longer to learn to reach developmental milestones, learn daily living skills, and learn academic skills at school. Intellectual disability was previously referred to as 'intellectual disabilities'.

Intellectual disability is a disability that occurs before age 18. People with this disability experience significant limitations in two main areas: 1) intellectual functioning and 2) adaptive behaviour. These limitations are expressed in the person's conceptual, social and practical everyday living skills. A number of people with intellectual disability are mildly affected, making the disability difficult to recognize without visual cues. Intellectual disability is diagnosed through the use of standardized tests of intelligence and adaptive behaviour. Individuals with intellectual disability who are provided appropriate personalized supports over a sustained period generally have improved life outcomes

RPWD Act-2016, India

Intellectual disability, a condition characterised by significant limitation both in intellectual functioning (reasoning, learning, problem solving) and in adaptive behaviour which covers a range of every day, social and practical skills, including

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

(b) "autism spectrum disorder" means a neuro-developmental condition typically appearing in the first three years of life that significantly affects a person's ability to communicate, understand relationships and relate to others, and is frequently associated with unusual or stereotypical rituals or behaviours.

6.2 Types of Intellectual Disability

Experts divide the types of cognitive impairment into four categories: mild intellectual disability, moderate intellectual disability, severe intellectual disability, and profound intellectual disability. The degree of impairment from an intellectual disability varies widely. DSM-V places

less emphasis on the degree of impairment (i.e. IQ scores) and more on the amount and type of intervention needed.

While IQ scores are still relevant and important in assessing the level of intellectual disability, the new DSM-V adds another layer of diagnostic criteria. Mental health professionals must consider the person's ability or impairment across three skill areas: conceptual, social, and practical life skill.

The category details are as follows:

Mild intellectual disability

- IQ 50 to 70
- Slower than typical in all developmental areas
- No unusual physical characteristics
- Able to learn practical life skills
- Attains reading and math skills up to grade levels 3 to 6
- Able to blend in socially
- Functions in daily life

About 85 percent of people with intellectual disabilities fall into the mild category and many even achieve academic success. A person who can read, but has difficulty comprehending what he or she reads represents one example of someone with mild intellectual disability.

Moderate intellectual disability

- IQ 35 to 49
- Noticeable developmental delays (i.e. speech, motor skills)
- May have physical signs of impairment (i.e. thick tongue)
- Can communicate in basic, simple ways
- Able to learn basic health and safety skills
- Can complete self-care activities
- Can travel alone to nearby, familiar places

People with moderate intellectual disability have fair communication skills, but cannot typically communicate on complex levels. They may

have difficulty in social situations and problems with social cues and judgment. These people can care for themselves, but might need more instruction and support than the typical person. Many can live in independent situations, but some still need the support of a group home. About 10 percent of those with intellectual disabilities fall into the moderate category.

Severe intellectual disability

- IQ 20 to 34
- Considerable delays in development
- Understands speech, but little ability to communicate
- Able to learn daily routines
- May learn very simple self-care
- Needs direct supervision in social situations

Only about 3 or 4 percent of those diagnosed with intellectual disability fall into the severe category. These people can only communicate on the most basic levels. They cannot perform all self-care activities independently and need daily supervision and support. Most people in this category cannot successfully live an independent life and will need to live in a group home setting.

Profound intellectual disability

- IQ less than 20
- Significant developmental delays in all areas
- Obvious physical and congenital abnormalities
- Requires close supervision
- Requires attendant to help in self-care activities
- May respond to physical and social activities
- Not capable of independent living

People with profound intellectual disability require round-the-clock support and care. They depend on others for all aspects of day-to-day life and have extremely limited communication ability. Frequently, people in this category have other physical limitations as well. About 1 to 2 percent of people with intellectual disabilities fall into this category.

According to the new DSM-V, though, someone with severe social impairment (so severe they would fall into the moderate category, for example) may be placed in the mild category because they have an IQ of 80 or 85. So the changes in the DSM-V require mental health professionals to assess the level of impairment by weighing the IQ score against the person's ability to perform day-to-day life skills and activities.

The types of intellectual disability are frequently grouped by school-area skill sets. For school-aged children, the most conspicuous types of cognitive impairments involve reading, writing, or mathematics. If your child isn't yet in school, you may notice delays in speech development or development of gross and fine motor skills (i.e. crawling, walking, running, using eating utensils). Don't forget that these learning disabilities look different from one child to another.

Intellectual disability in reading

Two types of intellectual disability occur in reading. One type manifests when your child has difficulty understanding relationships between letters, sounds, and words. The other shows up in problems with reading comprehension where your child has issues grasping the meaning of words, sentences, and paragraphs. Signs of intellectual disability in reading:

- problems in letter and word recognition
- problems understanding words and ideas
- slow reading speed and low fluency
- poor vocabulary skills

Intellectual disability in math

The types of intellectual disability in math vary widely depending on the capacity of your child. For instance, your child's ability to succeed in math is affected by any co-occurring language disability, visual impairment, or problems with memory, organization and sequencing. If your child struggles with memorizing and organizing numbers and math facts, he or she may have an intellectual disability in math. He or she may have great difficulty telling time and with abstract thought.

Intellectual disability in writing

This type of intellectual disability can involve either the physical activity of writing, the mental activity of comprehending and putting together information, or both. Children with this intellectual disability have problems forming letters, words, and written expression. Signs of an intellectual disability in writing include:

- messy writing
- problems copying letters and words with accuracy
- problems with spelling
- issues with coherence and organization when writing

Intellectual disability with motor skills

Children with an intellectual disability that affects motor skills have problems with both gross and fine motor skills. They may seem uncoordinated for their age and have significant problems with movements that require hand to eye coordination.

Intellectual disability with language

This type of intellectual disability involves the ability to speak and to understand spoken words. Signs of this type of impairment include:

- problems retelling a story
- problems in speech fluency
- issues with understanding word meanings
- issues carrying out directions
- problems understanding parts of speech

Intellectual disabilities with auditory and visual processing

Some children have auditory or visual processing problems, causing learning to suffer. This intellectual disability manifests by causing the person to have difficulty in processing the things they hear and see. They may lack the ability to tell the difference between certain sounds. Others can't distinguish the difference between certain shapes and

images. Depending on the severity of impairment, this can profoundly affect learning.

Children with mild impairment may simply have slight challenges in one or two areas. Those with severe to profound impairment in many or all areas may need constant supervision and highly specialized educational services.

Other disorders that may occur along with intellectual disabilities include attention deficit hyperactivity disorder (ADHD) and autism. Both of these disorders make can make learning and day-to-day life difficult, especially if compounded with intellectual disabilities.

It's important to understand that these learning disabilities occur at various levels and your child's needs depend on the severity of impairment.

6.3 Characteristics of Intellectual Disabilities

The common characteristics of intellectual disabilities: difficulty learning and processing information, problems with abstract thought, and problems with social interactions occur at varying levels unique to each individual. (Learn about the differences between mild, moderate and severe intellectual disability) Intellectual impairment involves problems with mental abilities that affect day-to-day functioning in three areas:

- *Conceptual* – includes problems with skill in language, reading, writing, mathematics, reasoning, memory, knowledge retention
- *Social* - refers to issues with empathy, judgment, communication, making and keeping friends and other social functions
- *Practical* – focuses on problems with self-care, such as personal hygiene, job duties, personal finance, organization

It's critical that parents who suspect their child may have an intellectual impairment seek counselling and help from qualified mental health and medical professionals.

While we discuss several characteristics that are often seen when a student is identified with a mild intellectual disability, we do not

mean to suggest that all students with this disability are alike. Indeed, as with any group of people, students with mild intellectual disabilities vary widely in their ability to do schoolwork and adjust to social situations in school and other locations. However, in contrast to most other disability categories, students with mild intellectual disabilities tend to have more general, delayed development in academic, social, and adaptive skills. This delayed development is reflected in low achievement across content and skill areas as well as significantly lower scores on measures of intelligence and adaptive behavior when compared with students who are not identified with intellectual disabilities.

Academic Performance

Students who are identified with mild intellectual disabilities lag significantly behind grade-level peers in developing academic skills. Thus, students with mild intellectual disabilities are likely to be significantly delayed in learning to read and learning basic math skills (Taylor, Richards, & Brady, 2005). This delay in developing foundational skills in reading and math, coupled with delays in language skills, then results in delays in other academic areas that require the use of these skills (e.g., writing, spelling, science).

Students with intellectual disabilities continue to lag behind age-level peers in academic achievement throughout their school years. However, many students with mild intellectual disabilities develop basic literacy skills and functional mathematics skills. For example, most students with mild intellectual disabilities learn basic computational skills and functional arithmetic skills related to money, time, and measurement. However, most of these students continue to have difficulty with more advanced skills related to content, such as mathematical reasoning and applying concepts to solve problems (Beirne-Smith et al., 2006).

It is noteworthy that delayed language development, which is characteristic of students with mild intellectual disabilities, also has a negative influence on academic achievement. The academic area in which language delay has the most detrimental effect is reading (Torgesen, 2000). While students who are mildly intellectually disabled and who are poor readers share a deficit in phonological language skills similar to other students with disabilities (e.g., students with LD), students with intellectual disabilities are also often significantly delayed

in general oral language skills. Thus, even if students with mild intellectual disabilities develop the ability to read individual words and strategies for reading comprehension, they will have difficulty comprehending what they have read because of weak verbal skills in areas such as vocabulary. Therefore, teachers need to provide these students with instruction to address their phonological weaknesses as well as a broader range of language skills (e.g., vocabulary development) (Torgesen, 2000).

Cognitive Performance

Students with mild intellectual disabilities are characterized by general delays in cognitive development that influence the acquisition of language and academic skills. Moreover, while these students can learn much information that is part of the general education curriculum, they learn more slowly than the typical students do. Deficits in specific cognitive skill areas also contribute to this delay. Three of the most important cognitive skill deficits exhibited by students with mild intellectual disabilities are related to attention, memory, and generalization.

Attention- Students with mild intellectual disabilities have difficulty with different types of attention, including orienting to a task, selective attention, and sustaining attention to a task. Orienting to a task requires a student to look in the direction of the task (e.g., a teacher demonstrating how to solve a math problem on an overhead projector in the front of the room). Selective attention requires that the student attends to relevant aspects of the task and not to unimportant task components (e.g. attending to one type of math problem on a page and completing the appropriate operation). Finally, sustained attention requires that the student continues to attend to a task for a period of time.

The attention difficulties of students with mild intellectual disabilities have several implications for how they may be more effectively taught (Beirne-Smith et al., 2006, p. 277). For example, teachers should

1. present initial stimuli that vary in only a few dimensions,
2. direct the individual's attention to these critical dimensions,

3. initially remove extraneous stimuli that may distract the individual from attending
4. increase the difficulty of the task over time, and
5. teach the student decision-making rules for discriminating relevant from irrelevant stimuli.

Memory Students with mild intellectual disabilities also have difficulty remembering information (i.e., short-term memory). For example, these students may have difficulty remembering math facts or spelling words, or if they remember this information one day, they may forget it the next day. To some degree, memory problems are influenced by attentional difficulties. That is, students will have difficulty remembering information if they do not orient to the information, select the information that needs to be remembered, and maintain attention to the important material for a period of time.

However, distinct from attention problems, students with mild intellectual disabilities have difficulty generating and using strategies that help facilitate short-term memory. For example, when students attempt to remember information, many use a rehearsal strategy (repeating information over and over) to facilitate learning. Teaching approaches to addressing short-term memory deficits include focusing on meaningful content during instruction and instructing students about strategies that they might use to facilitate remembering information (e.g., rehearsal, clustering information, using mnemonic devices).

Generalization: A final area in which many students with mild intellectual disabilities have difficulty relates to the generalization of information to other material or setting. For example, a student may learn operations for addition and subtraction but may then have difficulty generalizing this information to a division problem. Similarly, a student may learn a new word when reading material in one subject area but may have difficulty reading the same word in other reading material. Students with mild intellectual disabilities also have difficulty generalizing material learned in one setting to another (e.g. from school to the park). Teaching strategies that may be used to address difficulties with generalization include teaching material in relevant contexts, reinforcing students for generalizing information across material or settings,

reminding students to apply information they have learned in one setting to another, and teaching information in multiple settings.

Social Skills Performance

Many of the cognitive characteristics of students with mild intellectual disabilities may contribute to difficulty interacting socially. For example, a low level of cognitive development and delayed language development may cause a student with intellectual disability to have difficulty understanding the content of verbal interactions and understanding expectations (e.g. when to listen, when and how to respond) during verbal interactions. Similarly, difficulty with attention and memory impedes social interactions, as students with mild intellectual disabilities have difficulty attending to important aspects of social interactions, maintaining attention over time, and holding important aspects of what they observe in short-term memory.

In addition to social difficulties that result from general cognitive deficits, students with mild intellectual disabilities share many of the same social difficulties of students with learning disabilities, including the inability to read social cues and interact successfully in conversations, lack of affiliation in school activities, low social status, and negative self-concept.

As with students with LD, these characteristics often lead to lower social status in classrooms and, at times, alienation of students from teachers and peers and lack of affiliation or involvement in school. Moreover, social skills deficits may lead students with mild intellectual disabilities to feel that they are unimportant to peers and teachers and produce feelings that they are not involved in the social community of the school. These difficulties may lead students with mild intellectual disabilities to withdraw in social situations or seek attention in inappropriate ways. They may also behave inappropriately because they have difficulty distinguishing between acceptable and unacceptable standards of behaviour.

Directly teaching social skills is one approach that may be used to address the social skills deficits of students with mild intellectual disabilities. This may be necessary for many students with mild

intellectual disabilities because their limited cognitive and language skills prevent them from developing these skills through spontaneous interactions with peers.

Students with mild intellectual disabilities have little opportunity to interact with age-level peers in school settings, due to the fact that they spend a large proportion of the school day in segregated school settings with other students with disabilities. Extensive research evidence reveals that the social skills of students with mild intellectual disabilities tend to improve when they are provided with appropriate supports and included in a general education classroom with age-appropriate peers for a large part of the school day.

Check your progress

- Notes:** a) Write your answer in the space given below.
b) Compare your answer with those given at the end of the unit.
1. Define Intellectual Disabilities.

UNIT 7 TOOLS AND AREAS OF ASSESSMENT

Objectives

After going through this block, you will be able to:

- Apply tools for assessing intellectual disabilities.
- Identity areas of assessing intellectual disabilities.

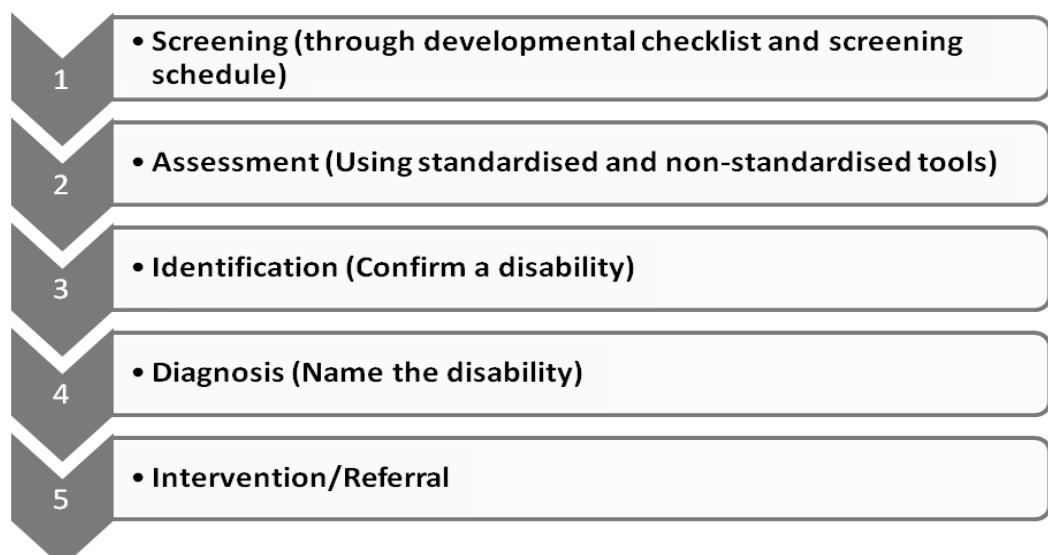
Assessment is an inevitable process in daily life for understanding, adjustment and for taking decision for future action. We do assessment in family, in classroom, in the market, and all other routine works in the society. Assessment starts from collection of information and continues in making decision for appropriate action to be taken for improvement of the individual. Assessment is very much useful in providing services like

physical health, mental health, educational process, training, employment, guidance and counselling etc. Assessment in special education is the process used to determine a child's specific learning strengths and needs, and to determine whether or not a child is eligible for special education services.

Screening is the first step of identification and diagnosis a disability. It is a process that identifies a person who needs further assessment for diagnosis of a disability. Screening helps in 'suspecting disability' in a person. A screening procedure does not confirm disability but helps in short listing for detailed assessment. Screening can be done at various stages of development such as- prenatal, natal and postnatal. Early screening and identification is very important because it leads to early intervention and helps to reduce the handicapping condition of the individual.

Identification is the second stage in the process of diagnosis of a disability. Identification procedure is to confirm a disability. Proper identification is very significant because it is the basis for intervention services.

The process of identification starts with screening and ends at intervention planning or referral. The flow chart given below represents various steps in the process of identification of disability.



In our country, there are many assessment tools available for identifying the baseline performance of children with intellectual disability. The outcome of this assessment will be helpful for planning their education. Important tools are outlined in brief in the following:

7.1 Madras Developmental Programming System (MDPS)

The first Indian comprehensive Behavioural Scale developed in 1975 at Chennai. This scale is used for the assessment of behaviour potential and programme planning of children with intellectual disability. It could be used for any age, sex and level of retardation in our country. MDPS 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 intellectual disabilities.

Description

This scale provides information about the children's ability in 18 functional areas. It 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 arranged in an increasing order of developmental difficulty. This means that the activities are sequenced in such a way that simple activities are listed first, followed by complex ones. The domains are listed below:

1. Gross Motor Activities.
2. Fine Motor Activities.
3. Meal Tim 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 simple. The user should have an assessment kit ready on different items of the domains. The information with respect to each item can be obtained by direct observation of the child or by asking (interviewing) the parents or care takers. There is a format for recording the performance of the child periodically (Ist, IInd and IIIrd quarters). 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 in the format. The blue area indicates the student's abilities and red area indicates the needs, to be given training.

Use

The MDPS is useful for the teacher for assessing the child and planning IEP and for management in the classroom due to its unique features like:

1. Cover all developmental areas
2. The items in each domain are arranged in an order of developmental difficulties
3. Easy administration
4. Helps to identify and prioritise the needs of the child
5. Helps in Planning IEP and Educational Grouping of the children
6. Helps in formative summative evaluation of the curriculum transaction.
7. Helps in monitoring the special educational services.
8. Could be used throughout the schooling of the student.

7.2 Basic-MR (Behavioural Assessment Scale for Indian Children with Mental Retardation)

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/intellectual disabilities 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 are given in the table:

Sl. No.	Domain	No. of Items
1	Motor (Gross Motor and Fine Motor)	40
2	Activities of Daily Living (ADL)	40
3	Language (Receptive and Expressive)	40
4	Reading—Writing	40
5	Number—lime	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 are 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 and others	04

Administration

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

Format of BASIC-MR (Part-A)

Each child with mental retardation may show different levels of performance on every item on the BASIC -MR, Part A. The six possible levels of performance under which each items can be scored are as follows: Use the record booklet to enter the scores obtained by the child on each item.

Level One: Independent (score 5): If the child performs the listed behaviour without any kind of physical or verbal help, it is marked as independent and given a score of 5.

Level Two: Clueing (Score-4): If the child performs the listed behaviour only with some kind of verbal hints, then it is marked as “clueing” and given a score of 4

Level Three: Verbal Prompting (score 3): If the child performs the listed behaviour only with any kind of accompanying physical or manual help, it is marked as physical prompting and given a score of 3.

Level Four: Physically Prompting Score 2): If the child performs the listed behaviour only with any kind of accompanying physical or manual help, it is marked as physical prompting and given a score of 2.

Level Five: Totally dependent (Score 1): If the child does not perform the listed behaviour currently, he can be trained to do so. It is marked as totally dependent and given a score of 1.

Level Six: Not applicable (Score 0): Some children may not be able to perform listed behaviour at all owing to sensory or physical handicaps. Wherever an item is marked “not applicable”, it gets a score of 0.

Format of BASIC – MR (Part B)

The following is the criteria of scoring, which needs to be used for BASIC – MR (Part-B). For any given child with mental retardation, check each items of the scale and rate them along a three point rating scale viz, never (n), occasionally (o) or frequently (f) respectively given in the record booklet against each items on the scale.

1. If the started problem behaviour presently does not occur in the child, mark “never” (n) and give a score of zero.
2. If the started problem behaviour presently occurs once in a while or now and then, it is marked “Occasionally” and given a score of one.

3. If the started problem occurs quite often or, habitually, it is marked “frequently” and given a score of two.

Thus, for each item on the BASIC – MR – Part B, a child with mental retardation may get any score ranging from zero to two depending on the frequency of that problem behaviour. Enter the appropriate score obtained by the child for each item in the record booklet.

7.3 Functional Assessment Checklist for Programming (FACP)

Functional Assessment Checklist for Programming (FACP) is an activity based checklist used for assessment and programming of children with mental retardation. This checklist was developed at NIMH in the Department of Special Education under the supervision of Dr. Jayanthi Narayan. The activities listed in the checklist are easy to understand, necessary for daily living, easily observable, age appropriate as far as possible and ultimately contribute to living independently in the community.

Grouping of students

The checklist covers content for various groups namely Pre-primary, Primary – I, Primary – II, Secondary, Prevocational-I, Prevocational-II and care group

The grouping is done based on ability and chronological age of the children. Keeping the principle of ‘zero reject’ in mind, the grouping is made for children of all degrees of mental retardation in the school going age ie. 3 to 18 years.

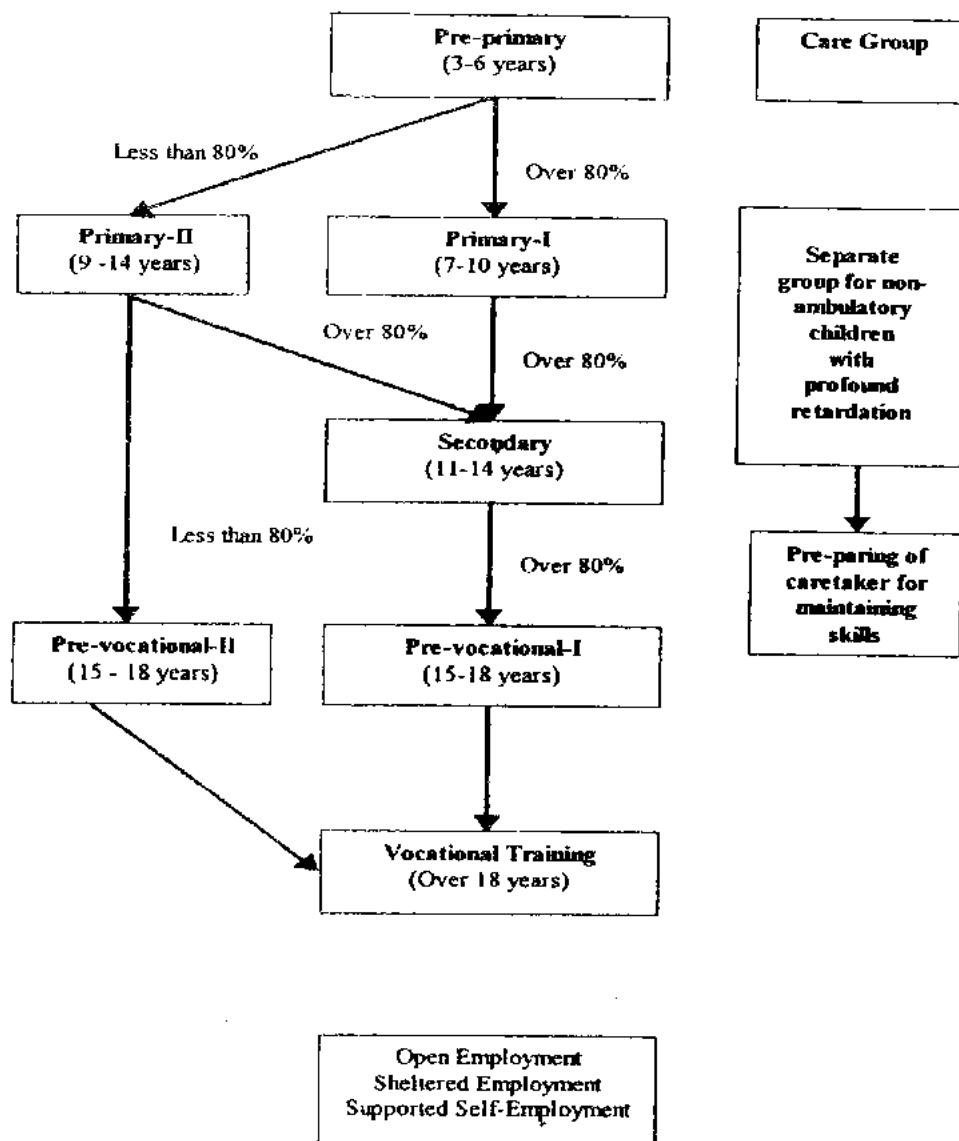
Pre-primary: This group consists of children between 3-6 years of age. The coverage of content in the areas of personal, social and academic is more than with occupational area in this level.

Primary-I Student who achieves 80% of the items in pre-primary checklist are promoted to primary -1 level and the age of the students entering in this class may be 7 years approximately. In some cases the students may continue one more year pre-primary to fulfil the pass

criteria (For example, if a student who is 7 years has achieved about 60% on evaluation in primary checklist he may continue in the same class for a longer time and see whether he / she can achieve the said pass criteria, ie. 80%).

Primary II: The students who do not achieve 80% of the items in the checklist in pre-primary level even after 8 years of age are placed in Primary II. Presumably there are children with low functioning abilities. The content in the academic area is minimal for this group. This group covers children from 8-14 years. When they achieve 80% of the items in the primary-II checklist they are promoted to Prevocational-II. In some cases they may achieve 80% before the age of 14 years and may be promoted to prevocational-I and those who achieve less than 80% will be promoted to prevocational –II.

Promotion Criteria of FACP



Secondary: Student who achieves 80% of the items in primary1 checklist are promoted to secondary level and the age of the students entering in this class is 11 years. This group covers children from 11-14 years. When they achieve 80% of the items in the secondary checklist they are promoted to Prevocational-I class. At the secondary level the focus is on academic skills.

Pre-Vocational I and II: Both the groups consist of students in the age group 15- 18 years. The primary focus of training is on preparing students in basic work skills and domestic activities. Hence, the major content covered in the checklist are in the areas of occupational, social, and academic. However, the content coverage under academic area will be minimal or need based for prevocational –II group of students.

Persons with mental retardation over 18 years will be sent to vocational training units with their summative evaluation reports for further programming. This curriculum checklist does not cover the vocational area.

Care group: This group includes children with very low ability (bed ridden-profoundly retarded) and the items in the checklist focus on training them in performing partially, the basic skills such as drinking, eating, toileting, and basic meaningful motor movements and communication. If they continue to stay non ambulatory as the age advances, the parent / caretaker may find it difficult to bring the child to school. In such cases, simultaneously preparation of caretaker for maintaining learned skills is necessary. It is good to have the children of this group distributed one each in each class starting from prevocational group. This would provide a stimulating environment for them. However, they should be assessed using care group checklist, irrespective of the group they are placed.

Checklist Content

The content in each checklist consists of the core areas of personal, social, academic, occupational and recreation. As children come from different cultures and ecological backgrounds, there is a provision for deletion and addition of curricular items in each area depending on the individual needs of a student. By doing so, the teacher plans an appropriate individualized curriculum for every student in her class.

Scoring Format

The format is so designed that the programmer can enter assessment information (entry level) and the progress periodically (at every quarter) for about three academic years, as it is assumed that a student stays a maximum of 3 years in a given level. At the end, a table is given to note the progress of individual child in all progress report, which is also a component of FACP.

The checklist has a provision for recording the performance of a student on a continuum of 3 years.

If a student performs an activity it is marked '+' and if he does not perform it is marked '-'. However, the student is provided with assistance in terms of prompts to assess the current level of a student. The prompts such as visual prompt, gestural prompt, modeling, and physical prompt are provided during the assessment to see with which prompt he is able to perform. For example, if he performs an activity with gestural prompt it is marked GP against that specific activity.

Items marked 'Yes' (or +) are counted as a point, while the others such as PP, VP, NE are noted but not counted for points. As the ultimate aim is that of achieving independence in a given activity area, those activities the child performs independently or with occasional cueing only will be considered for quantifying into scores. The items marked NA are deleted from the total items to be learned while calculating percentage. Similarly, specific items added should be included for calculating percentage.

The items listed under recreation need not be counted for quantification as these items are interest based. The grades given include:

- A = Takes initiative and participates effectively,
- B = Participates when others initiates,
- C = Involves self but not aware of rules,
- D = Observes with interest,
- E = Not interested (indifferent),
- NE = No Exposure.

The grades as noted above illustrate the involvement of recreational activities in the child. Such scoring is in line with the system in regular schools. The cumulative score on the last page can be the grade that is obtained as maximum among the recreational items. If more than one grading gets equal scores, the teacher may use her judgment and decide.

7.4 UPANAYAN—A Programme of Developmental Training for Children with Mental Retardation

Upanayan 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.

Content

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

Format

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 framing in home based and center based intervention.

7.5 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 the 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.

7.6 Functional Assessment Checklist for Programming (FACP-PMR)

The primary objective of education of children with Profound Mental Retardation (PMR) is to train them in skills that help them to attend to their personal needs partially if not completely, communicate their basic needs, and maintain acceptable behaviours as far as possible. Accordingly the curriculum content included the areas such as Self help

(eating, drinking, toileting, brushing, and dressing), Motor, Communication, Social and Visual skills.

The checklist consists of the core areas such as Self-help, Motor, Communication, Social and Visual skills.

Content

The FACP-PMR checklist consists of four sections. Section A covers checklist of skills, Section B covers checklist of problem behaviours and Section C covers checklist of general problems along with glossary and section D covers progress report.

Section A- Checklist of Skills

The checklist includes core areas such as Self-help (eating, drinking, toileting, bathing and dressing), Motor, Communication and Visual skills. The items under each core area are in such a way that the assessor will be able to observe and measure the performance/achievement of the child objectively. Space is left under each core area for adding items that are appropriate and needed for an individual child. This provides a greater flexibility to the user in selecting the curriculum content that is essential for the development of individual student. It is warranted, as students come from varied cultures, economic status and environments and teachers have to take into consideration all the above factors while selecting the curriculum for teaching.

Section B - Checklist of Problem Behaviours

It has been noted in the literature and also has been observed that majority of children with profound mental retardation have behaviour problems. The same was observed with the cases who had participated in the field testing of FACP-PMR checklist. The checklist consists of 47 problem behaviours. There is also a provision at the end of checklist (Any other) to include the behavior problems other than the ones listed in the checklist.

Section C - Checklist of General Problems

Due to the nature of the disability and lack of appropriate timely treatment the persons with profound mental retardation develop health related and physical problems which hinders the progress of the student

if they are not addressed as a part of educational programming. In fact 76 (88%) out of 86 students assessed were reported to have health related and physical problems. Therefore, a checklist of general problems is also included for use of teachers. The problems reported were pooled for developing the checklist. The checklist consists of 24 items. The checklist will help the teachers to identify the problems and plan intervention programme or refer to other professionals for reducing the problems. A glossary for the items is prepared for clear understanding of the items so that the assessor can assess the problems with objectivity.

Format

The format is designed in such a way that there is a provision for recording the initial assessment and periodic evaluation data which tells about student's progress. Further, it helps teachers in planning instruction based on the performance periodically for one academic year. Keeping in view the regular school evaluation system, the periodicity has been kept at quarterly, half yearly and annual evaluation with two unit evaluations in each quarter. The same system of evaluation can be continued for the next academic year also. At the end of the checklist there is also a provision for recording the cumulative performance of the student in each core area and in the first page a provision for recording the cumulative performance of total scores in all areas periodically

Scoring

Key is provided for recording the performance of the student (+ = Yes; - = No; C = Occasional cues; NA = Not applicable; NE = No exposure; VP = Verbal prompt; GP = Gestural prompt; MP = Modeling prompt; PP = Physical prompt).

Item, which the student is able to perform on his own without assistance, is marked (+) and the items which he cannot even perform with different types of assistance (prompts) is marked (-). When student performs an activity with occasional cues, it is marked (c). Not applicable (NA) is marked where the item is not suitable for training of a specific student. The item is suitable for the student and the student is capable of learning if he was trained, then No exposure (NE) is marked. The different

prompt levels VP, GP, MP and PP are marked as per the performance of the student with a specific prompt.

Each item marked (+) or (c) is given a score of one (1). For example there are 25 items under eating skills. On assessment the student is able to do four (2) items independently and two (1) item with occasional cue (c). The scoring for eating skills will be six (3) (see appendix – 1).

Other Tools

Apart from these tests, **Grade Level Assessment Device (GLAD)** is used for finding out processing problem with learning problems in regular school who, many a time, are suspected as mentally retarded.

All the educational assessment tools described above are popularly used criterion referenced tools and have provisions for programming and progress monitoring.

Vocational Assessment and Programming System (VAPS) is used for post school vocational training programmes. It has vocational profile, generic skills assessment checklist, and job analysis format and behaviour assessment checklist.

In some schools, similar tests are developed by themselves and used to suit their needs. The point to keep in mind is that such tests should lead towards assessment of educational needs and provide link to training and formative evaluation. The teacher must be well trained and competent to use the tests.

Check your progress

- Notes:** a) Write your answer in the space given below.
- b) Compare your answer with those given at the end of the unit.
2. Mention the types of intellectual disability.

3. Expand VAPS.

UNIT 8 STRATEGIES FOR FUNCTIONAL ACADEMICS AND SOCIAL SKILLS

Objectives

After going through this block, you will be able to:

- Define functional academics.
- Teach strategies for functional academics.
- Train students on social skills.

8.1 Functional academics

Functional academics is 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
- Activities of daily living
- Reading
- Writing
- Communication

- Social & Emotional skills
- Community orientation
- Skill oriented activities
- Art and craft etc.

Living independently requires some skills which are considered academic, even if they do not lead to higher education or the completion of a diploma (Webster, 2019). Those skills include:

Math Skills - The functional math skills include telling time, counting and using money, balancing a checkbook, measurement, and understanding volume. For higher functioning students, math skills will expand to include vocationally oriented skills, such as making change or following a schedule.

Functional Math Skills

Before students can understand numbers and numeration, they have to understand one-to-one correspondence. As they count, they need to be able to match each item or items to a corresponding number and understand that the number represents a matching or a corresponding number of items. One-to-one correspondence will also be helpful in such household tasks as setting the table and matching socks. Other functional skills include:

Number recognition: This includes recognizing and being able to write the 10 digits, and then recognizing place value: ones, tens, and hundreds.

Skip counting: Skip counting by 5's and 10's to 100 is important for understanding time (such as five-minute increments on an analog clock) and money. Teachers can use a hundred's chart or on a number line to demonstrate skip counting.

Operations: It's vital for students to have a grasp of addition and subtraction.

At a later point, if your students have an understanding of these two operations, it may be possible to introduce multiplication and division. Students with special needs may not be able to develop the ability to do the math operations themselves independently, but they can learn how the operations are used in order to use a calculator to do calculations, like balancing a bank statement or paying bills.

Time

Time as a functional skill involves both understanding the importance of time—such as not staying up all night or not missing appointments because they don't leave enough time to get ready—and telling time on analog and digital clocks to get to school, work, or even the bus on time.

Understanding time requires comprehending that seconds are fast, minutes almost as fast, and hours much longer. Students with disabilities, especially significant cognitive or developmental disabilities, may have behavioral outbursts because they are "stuck" on preferred activities, and don't realize they will miss lunch. For them, building an understanding of time may involve a visual clock, like a Time Timer, or a picture schedule.

These tools help give students a sense of control over their schedule and an understanding of what happens and when during their school or even home day. Parents may also benefit from having visual schedules at home. For children with autism spectrum disorders, it can help avoid long periods of self-stimulatory (stimming) behavior, which may actually undermine progress they are making at school.

Teachers can also pair telling time with understanding the concept of time, for example, that 6 a.m. is when you get up and 6 p.m. is when you eat dinner. Once students can tell the time to the hour and half-hour, they can progress to skip counting by fives and telling time to the nearest five-minute interval. A geared clock, such as a Judy clock—where the hour hand moves when the minute hand goes around—helps students understand that both hands move together.

Money

Money, as a functional math skill, has several levels of skill:

Recognizing money: pennies, nickels, dimes, and quarters.

Counting money: first in single denominations and later mixed coins

Understand the value of money: budgets, wages, and paying bills

Measurement

Learning measurement for students with special needs should involve length and volume. A student should be able to use a ruler and even perhaps a tape measure for length and recognize inches, half and quarter inches, as well as feet or yards. If a student has an aptitude for carpentry or graphic arts, the ability to measure length or size will be helpful.

Students should also learn volume measurements, such as cups, quarts, and gallons. This skill is useful for filling tubs, cooking, and following directions. When cooking is part of a functional curriculum, a knowledge of measures of volume will be helpful. Students should be able to choose what they will cook, and find and read recipes. Familiarity with measuring volume will help students who want to pursue work in culinary arts, such as a kitchen assistant.

Language Arts - Reading begins as recognizing symbols, progressing to reading signs (stop, push), and moves on to reading directions. For many students with disabilities, they may need to have reading texts supported with audio recordings or adults reading. By learning to read a bus schedule, a sign in a bathroom, or directions, a student with disabilities gains independence.

8.2 Social Skills

Karra (2013) in her research article described the following on social skills of persons with intellectual disabilities. Social skills are defined as the set of skills used to interact and communicate with one another. These skills include daily interaction skills such as sharing, taking turns, and allowing others to talk without interrupting. According to Kratchowill and French (1984) social skills are learned verbal and nonverbal behaviors that are performed within a specific social context. Social skills

are necessary to form and sustain relationships with others. These skills may be acquired through gradual learning and are largely influenced by a variety of social agents present in the culture. This process of learning and acquiring in the society is called socialization and when these skills are performed adequately they are referred to as social competency. Social competence includes both social skills and adaptive behavior. Children differ greatly in their social traits because of the influence of family, neighbourhood and school environment which are important units of a society. Schools and classrooms are social environments where children function effectively from instructional activities that occur in an interactional context.

However children with intellectual disabilities encompass a heterogeneous group of people with varying needs. They learn things more slowly than other children of the same age. They show a delay in development like late to smile, to move, show interest in things, sit, and walk. They have a deficit in one or more areas like self care, home living, communication and social skills, use of community resources. They have difficulty in intellectual functioning and in the performance of day to day activities expected of a person of similar age. Children with intellectual disabilities are often at risk for difficulties in social and emotional development. These children lack the social and language skills needed to initiate and maintain relationships. The social repertoires of children with intellectual disabilities have been found to be limited compared to those of normal children. One of the early findings by Guralnick & Weinhause (1984) and Strain (1984) was that children with intellectual disabilities initiate fewer social interactions and demonstrate fewer responses to peers when compared to normal children. As early as preschool, many children with developmental disabilities have difficulty forming friendships. They tend to interact less frequently with peers and engage more frequently in solitary or unoccupied activities.

Check your progress

- Notes:** a) Write your answer in the space given below.
- b) Compare your answer with those given at the end of the unit.
3. What do you mean by functional academics?

UNIT 9 ASSISTIVE DEVICES, ADAPTATIONS, INDIVIDUALIZED EDUCATION PLAN, PERSON CENTERED PLAN, LIFE SKILL EDUCATION

Objectives

After going through this block, you will be able to:

- Identify assistive devices for children with ID.
- Plan for adaptations for CwID.
- Write IEPs for CwID.
- Teach life skills to CwID.

9.1 Assistive Devices and Adaptations

Adaptations in the physical environment

Altering the physical and social environment and the timing of activities to promote a child's participation, engagement, and learning. Adaptation in the physical environment is very essential for accessibility. Especially children who have gross motor difficulties such as neuro muscular disorders require modifications in the physical environment to move around and explore things independently. The major adaptations in the physical environment include the following



Pictures above depicting adaptations in the physical environment

- ✓ Ramp or lift in the buildings
- ✓ Railing throughout building

- ✓ Chairs with suitable heights for the child
- ✓ Public dealing counter, switch boards and other essential facilities like public telephones, drinking water, ATMs, vending machines should be kept lower levels for easy access by wheel chair users.
- ✓ Wide doorways and corridors to make easy movement in wheelchair, door hardware like handles, latches and locks should be operable with one hand.
- ✓ The washrooms/toilets need to be spacious enough for movement of wheelchair.
- ✓ There should be grab bars in the toilet and vice versa.
- ✓ Public transport system needs to be made accessible with appropriate space and low floor.
- ✓ Subways for crossing roads should have ramps.

The public buildings are given permission for construction these days only when such provision are made in the building for accessibility for persons with disabilities. Access Audit is an exercise carried out by the office of Chief Commissioner of Disabilities under Persons with Disabilities Act 1995 in India.

Adaptations for writing

Children with fine motor difficulties or limitations in the function of upper limbs, as in the case of children with cerebral palsy, require adaptations for writing tasks. Following are the major writing adaptations.



Pictures above showing adaptations for writing

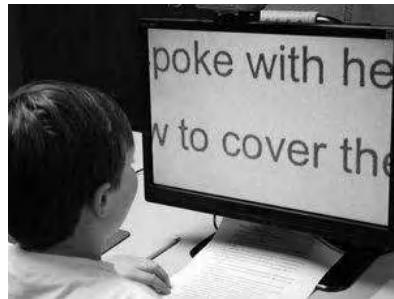
- An adjustable writing table.
- Clip boards or parallel rulers may be used to keep papers stabilised while writing.
- Rubber grip balls attached to pen/pencil will be useful for holding the pen/pencil appropriately for writing.
- Head pointers can be used for computer inputs for those who cannot use their fingers for writing but have head control and eye contact.
- Pen/pencil holder attached to the hand is useful to hold the pen/pencil by those who suffer from loss of grip in fingers.
- Wooden/plastic rod with pencil holder can be used for those who cannot hold tiny articles like pencil.

Adaptations for Reading

Following are some of the useful adaptations for reading:

Large Prints/Magnifiers: Increased font sized prints can be used for those who suffer from vision disorders with residual vision. The text as

well as figures/diagrams is also can be printed in large size for their convenience.



Pictures representing manual and computerised magnifiers

Signs/Symbols: Commonly used signs and symbols can be used instead of words for day to day simple directions and commands in school as well as in house.



Pictures showing different signs and symbols

Reading Helpers: These reading helpers are hand-made book sized monochromatic transparent flaps. These can be used for those who miss lines while reading. This will help them to concentrate on which line they are reading.



Picture offhand-made reading helper

Elongated brush

To be able to paint while sitting, one can lengthen the brush. Wrap the end of the brush with a piece of cloth and stick it into a light hollow tube. In this way, the brush is firmly fixed and can be changed easily whenever you need another brush.

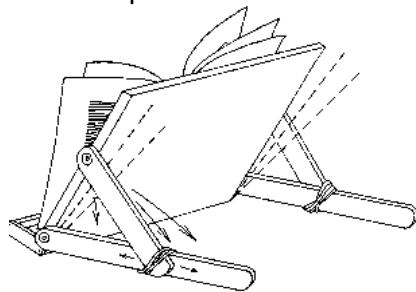
Reading spoon

A person who cannot use his or her hands in order to turn over the pages of a book may turn the page with the help of wooden spoon with a roughened tip. For example, twist a rubber band around the tip of the spoon.



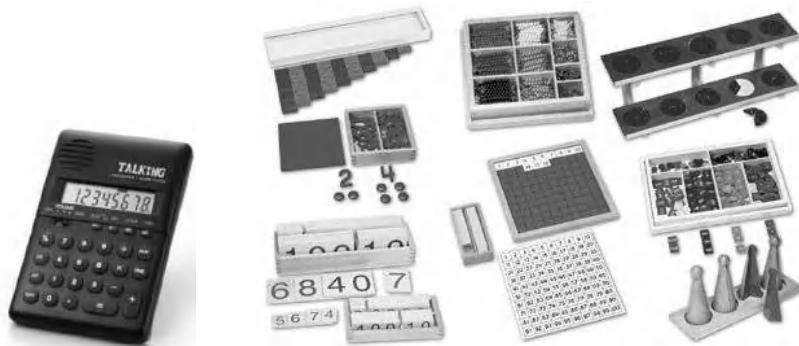
Reading stand

If a person cannot hold up a book very well, it can be put on a stand. Attach a small piece of wood, large enough to hold the book, at the front side. The angle of the stand is adjustable by sliding the elastic bands forwards or backwards. The transverse laths are attached with partly tightened screws.



Adaptations for Arithmetic:

There are many household articles can be improvised for the purpose of adaptation for arithmetic skills for children with mental retardation. Madam Maria Montessori has given us her innovative Didactic apparatus for many academic skills including arithmetic skills. Below mentioned are some of the easiest ways of adaptations for arithmetic skills for children with intellectual disabilities.





Pictures above show adaptations arithmetic activities

Nowadays a lot of wooden and plastic materials are available in the market for teaching arithmetic skill easily to the children with intellectual disabilities. Some of the examples are presented above for your reference. One need not depend on the market products and use household articles instead for teaching basic arithmetic skills such as shapes, numbers, simple addition and deletion, etc.



Adaptations for Communication:

As we are aware that children with intellectual disabilities are having problems in communicative skills such as word pronunciation, receiving message from the sender, interpretation based on context, etc. Children with communication disorders frequently perform at a poor or insufficient academic level, struggle with reading, have difficulty understanding and expressing language, misunderstand social cues, avoid attending school, show poor judgement, and have difficulty with tests.

Difficulty in learning to listen, speak, read, or write can result from problems in language development. Problems can occur in the production, comprehension, and awareness of language at the sound,

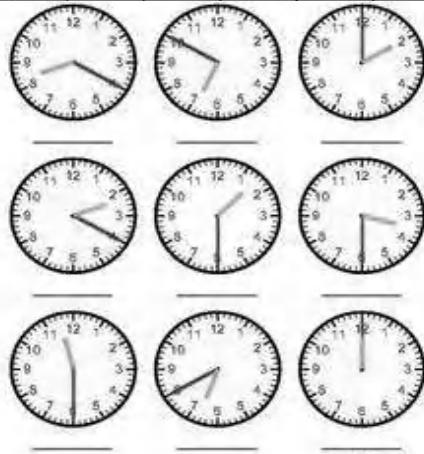
syllable, word, sentence, and discourse levels. Individuals with reading and writing problems also may experience difficulties in using language strategically to communicate, think, and learn.

To reduce difficulties in the above mentioned problems we have suggested the following way of adaptations for children with intellectual disabilities.

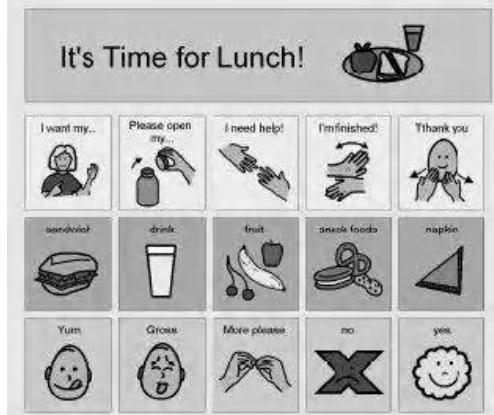
- Providing structure and reduce distraction in class or office.
- Simplifying and repeating instructions or information, as needed, both orally and in writing.
- Giving frequent and specific responses to students.
- Clearly stating the rules, policies, and behaviors expected in the classroom or office.
- Consistently following the rules and immediately pointing out the times when students are breaking the rules.
- Reviewing rules and expectations and using behavioral management techniques as needed.
- Being firm on the matter of fact, and specific when interacting with students with ADHD.
- Helping the students structure their work area and tasks.
- Avoiding unnecessary movement during lectures if you have students who are easily distractible.
- Maintain eye contact with the student. Do not turn away in the middle of a sentence.
- Avoid communicating while moving because moving reduces facial visibility and background sounds may be distracting.
- When any student asks questions from the class, it is helpful if you would repeat the question before answering it.
- Be aware that students with hearing impairments cannot look at you and do other work at the same time. Allow enough time for students to study printed material (such as handouts, charts, and over-heads), fill out paperwork, or complete the task/step you have just described before continuing.
- Get students' attention before beginning to speak. This may necessitate physical contact, such as a tap on the shoulder.

- Try to stay on the topic of discussion and make the topic clear. Students with hearing impairments pick up words in context that helps them follow the conversation more easily. This is especially important for those who depend on oral communication.
- Use facial expression to help convey your message, but do not exaggerate your mouth movements. Over emphasizing words distorts the lips, making speech reading more difficult. Try to speak slowly and clearly, enunciating each word without force or tension.
- Do not place anything in front of your mouth when speaking. Gestures like touching the mustache, pencil chewing, and putting your hands in front of your face makes it difficult for the students with hearing impairments to follow what is being said.
- If students' with hearing impairments have difficulty understanding something you have said, try repeating the phrase and showing procedures. If students still do not understand your message, try rephrasing your thought rather than repeating the same words.
- Do not be embarrassed to communicate by paper and pencil if necessary. Getting the message across is more important than the medium.
- Use open-ended questions that require answers to be more than just "yes" or "no." Do not assume that students have understood your message if they are only required to nod in acknowledgement. Open-ended questions ensure communication of your information.
- Ask student to repeat instructions or procedures for confirmation of complete understanding. Give the student an opportunity to rephrase directions for confirmation of understanding.
- Discuss with students where it would be best for him/her and the interpreter to sit in the classroom. The optimum situation would be for the interpreter to be near the instructor and for the student to be in the front of the room for a clear view.
- Try not to lecture with your back to the class (except when writing on the blackboard) because it destroys any chance of your student getting facial or lip-reading cues. Using an overhead projector often alleviates this problem.

- Feel free to call upon students with hearing impairments in class as you would do with any other student.
- Try to avoid standing in front of a strong light source (such as windows) because the glare from behind you makes reading lips and other facial features difficult.
- If reduction of the room lighting is necessary, check to see that sufficient light is available for the student to see the interpreter's signs and lip movements.
- Notify DRC as soon as possible if there are inaccessible videos or audio files that will be used in class or that students will be expected to access online.



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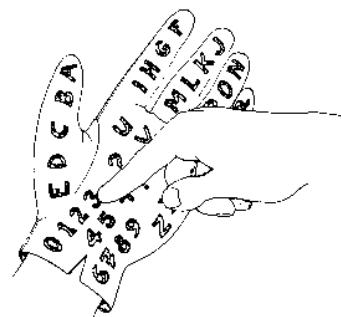


Pictures showing adaptations for communication

Alphabet glove

This glove is used by a person who is unable to talk, can formulate words by pointing at the letters on this glove. The letters and the numbers 1 to 10 on the glove have been glued on in random sequence.

These kinds of charts for emotions and basic day to day activities can be very well used for

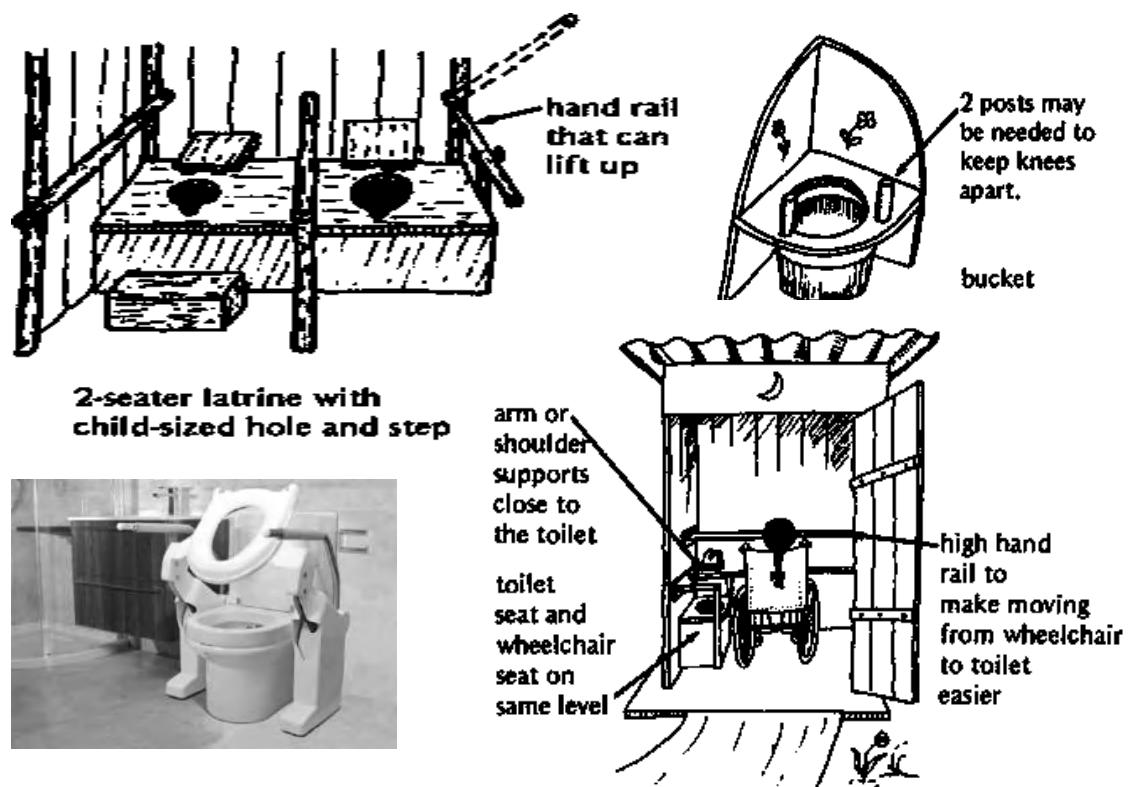


adaptations for communication for children with intellectual disabilities.

Adaptations for Personal Skills:

Toileting

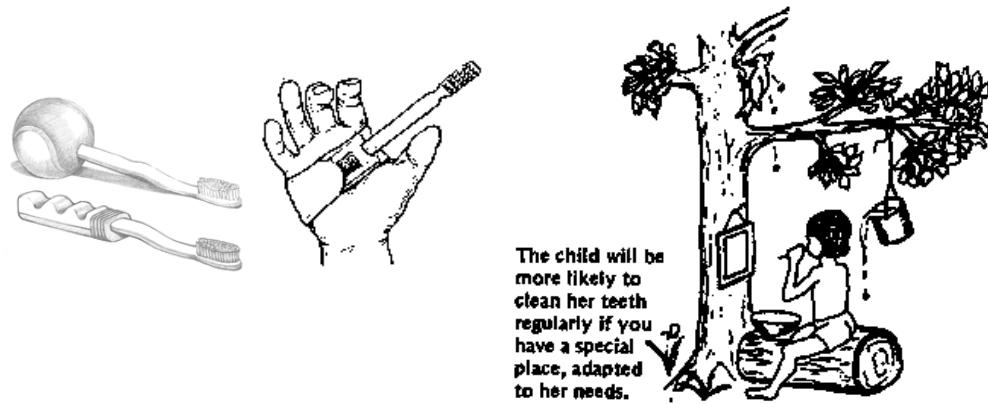
One of the difficult tasks of parents, teachers and care takers of children with intellectual disabilities is training them in toileting skills. Unless we make some modifications in the toilet the skill may not be useful to them appropriately. Because of the multiple disorders, need based modifications should be made in the toilet rooms such as accessibility, railing for hand grip, height of the toilet, flush out button, etc.



Pictures of adaptations for toileting

Brushing

There are many advancements introduced in the mechanism of tooth brushes. Following are some of the adaptations for brushing. Moreover electric automated tooth brushes are also available in the market, which can be used for those who cannot move their arms for brushing.



Pictures of adaptations for brushing

Bathing

Cleanliness is important for children with intellectual disabilities to avoid bacterial and germs development in their body. **Regular bathing is important for all children.** Bathing the severely disabled child, however, is often not easy. Children whose bodies get stiff or whose knees pull together may be very difficult to clean. As the child gets older and heavier, the difficulties often increase. Here are some aids and ideas that may make bathing easier.

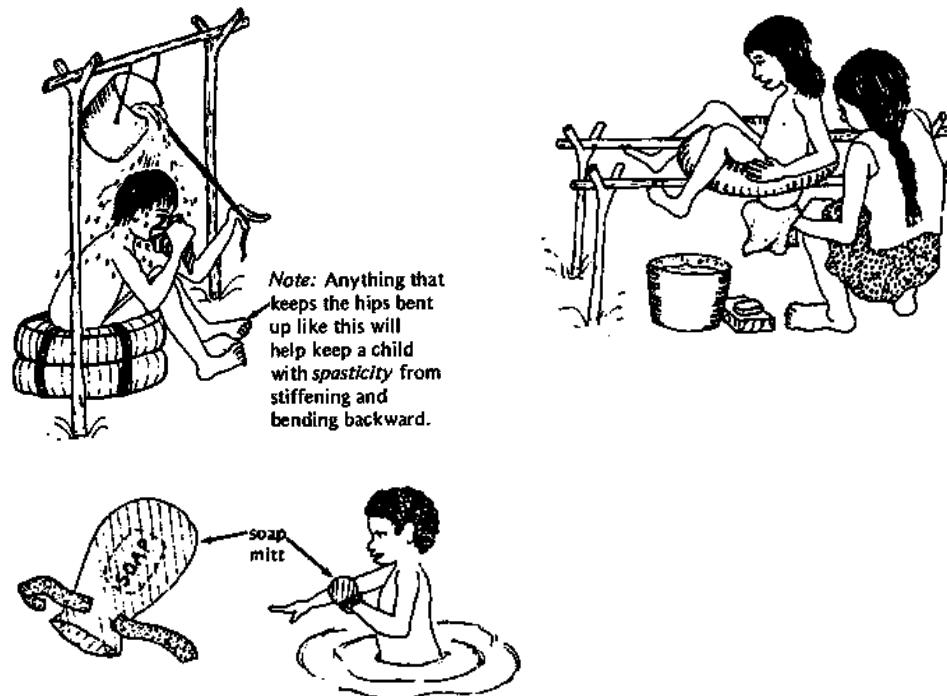
For the baby or small child, some kind of a tub may be a big help.



A rectangular tub of the size you need can be made out of mud or mud bricks (or dried bricks) and covered with a thin layer of cement.



This is a good way to hold the child who stiffens and bends backward, or throws open her arms when you pick her up.

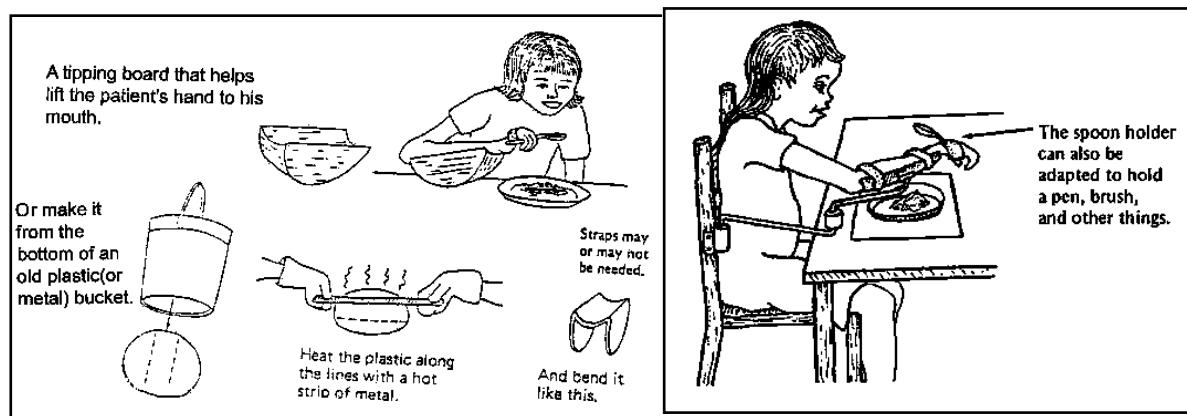


Picture of adaptations for bathing

Especially for the child who does not have good bowel or urine control, it is very important to carefully clean his/her butt and between her legs. An inner tube on poles, like this, holds her in a good position for washing.

Eating

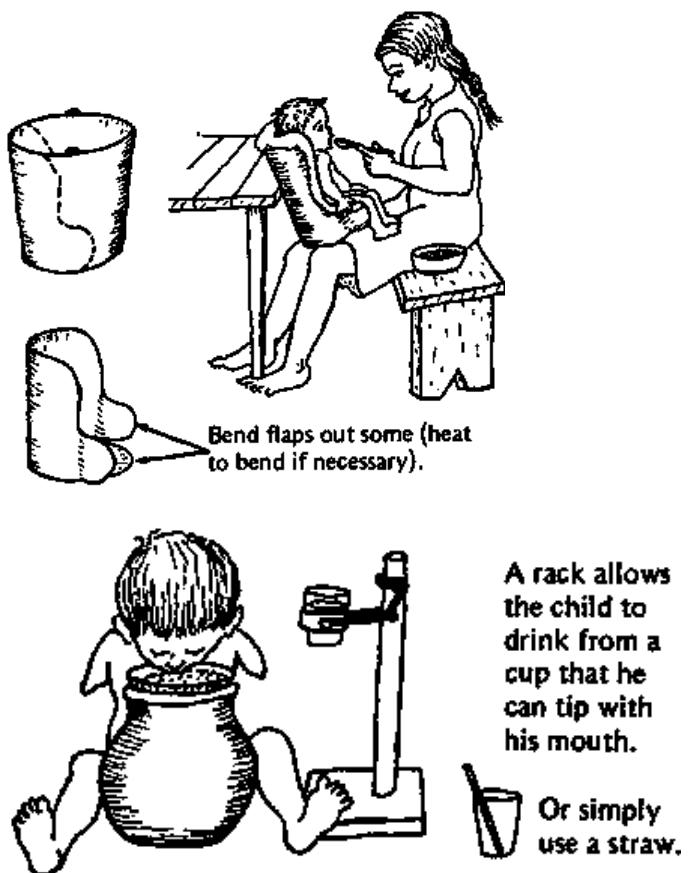
Adaptations for eating skills, the materials in physical environment are to be modified. As per the need and severity of the disabilities we can adapt any comfortable modifications. The adaptations indicated in this unit are unique for the children with multiple handicaps along with intellectual disabilities.



Pictures of adaptations for eating

Swing-a-sling eating aid: This eating aid lets a child with very little strength in her arm feed herself. However, it must pivot smoothly but firmly at 3 points. It will take a skillful and imaginative craftsman to make it.

Arm rocker This is for a child whose arm is too weak to lift. Carve it out of wood or glue together layers of 'Styrofoam' (stiff foam plastic) or cardboard. Or make it from the bottom of an old plastic (or metal) bucket.



Pictures of adaptations for eating

Children with no use of their arms can feed themselves by lowering their mouths to their food. It helps if the plate can be lifted nearer to the face. A pot helps to stabilize the plate. If the plate has a rounded bottom, the child can tip it bit by bit as it is emptied.

Adapted cutlery articles:



Dressing:

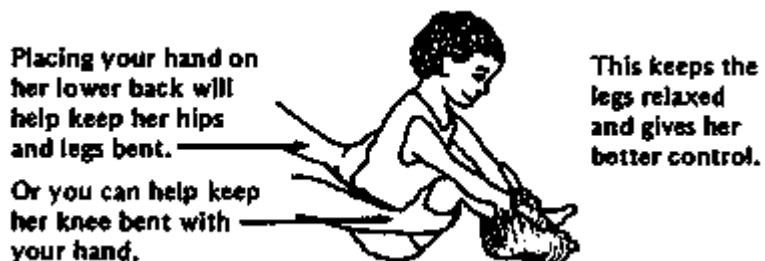
Children with intellectual disabilities, like other children, should be encouraged from an early age to help with their own dressing. It is

important, however, not to push a child to learn skills that are still too difficult for his/her level of development.

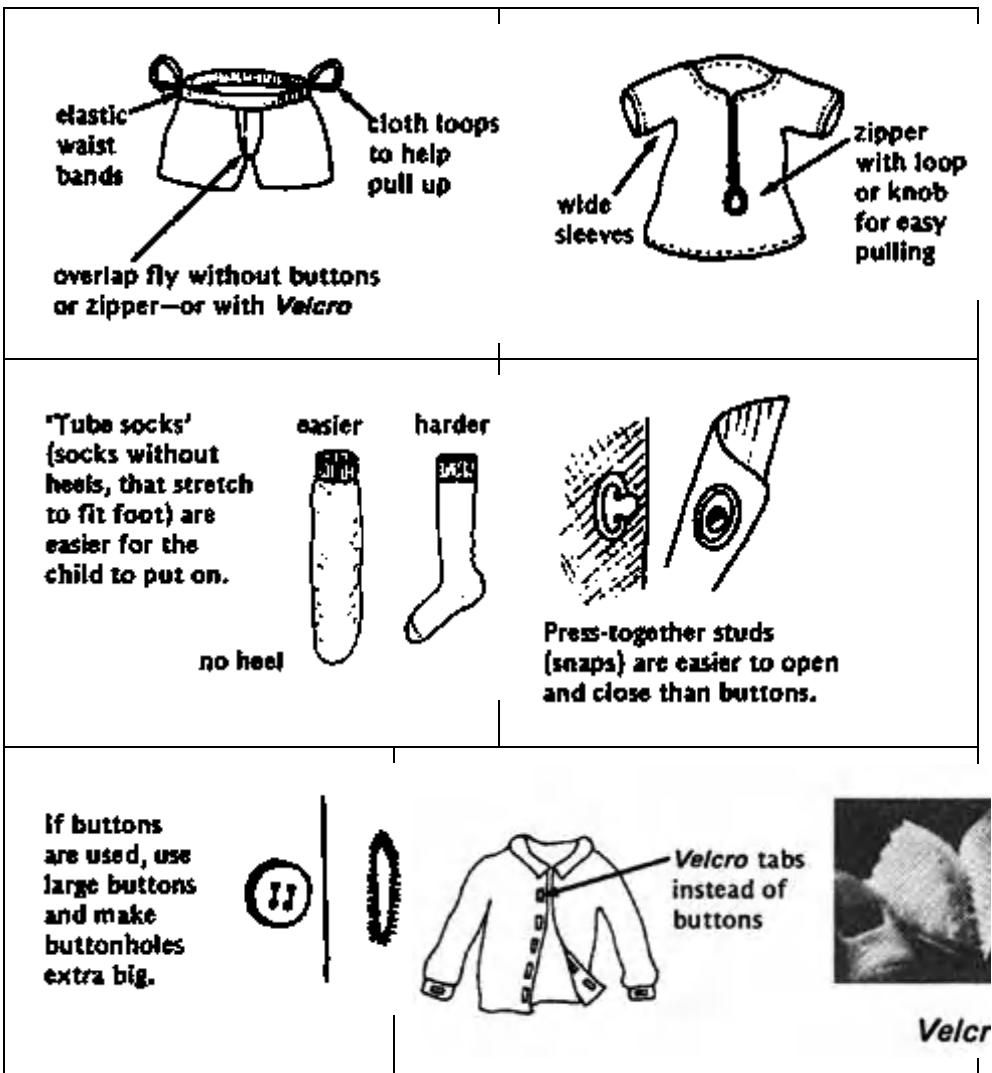
- If one arm or leg is more affected than the other, it is easier if you **put the clothes first on the affected side**.
- Put the clothes where the child can see and reach them easily, so he can help in any way possible.



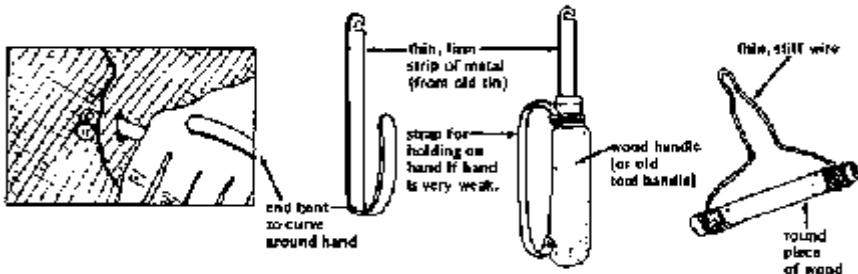
- If the arm is bent stiffly, first try to **straighten it slowly**, then put the sleeve on. (if you try to straighten it forcefully or quickly, it may become more stiff.)
- If the legs straighten stiffly, bend them gently in order to put on pants or shoes.



- Begin any dressing activity for the child, but let him finish it for himself. Little by little have him do more of the steps. If he can do it all by himself, give him time. Do not hurry to do it for him if he is struggling to do it himself. Praise him when he does well or tries hard.
- Use loose-fitting, easy-to-put-on clothing. Here are some ideas



- For children who have poor finger control, make a simple tool to button and unbutton buttons



These are some of the useful adaptation techniques for dressing skill for children with intellectual disabilities. One can use his/her innovative thinking for modifying any material for the needs of the children with intellectual disabilities.

9.2 Individualised education plan (IEP)

Individualised Education Plan (IEP) is a critical tool in deriving achievement and well-being for students with special educational needs. The concept of IEP was initiated in United States of America. There was no mandatory special education law prior to 1975. Many students with disabilities were provided an inadequate education or no education at all. A significant change occurred in 1975 with the passage of the education for all Handicapped Children Act (Public Law 94-142). (Amended in 1997 and again in 2004). This law protecting the rights of children with disabilities and their families has been currently enacted as the individuals with disabilities education Act (IDEA). Under IDEA, all students with disabilities are entitled to a written statement of present educational performance, measurable annual goals and special education services and accommodation. This is known as an IEP.

An Individualised Education Plan (IEP) is a written plan of action that specifies an individual's progress toward specific educational goals and objective. The purpose of the IEP is to organize the total educational program in order to maximize instructional benefits for the learner. Usable assessment data are necessary to fulfil this purpose. The IEP provides a measure of accountability for teachers and school authority but it is not a legally binding contract. The intent of IDEA is that IEP be used by teachers as a functional guide to confer service providers and parents about the educational program, to develop instructional plans, and to record student's progress.

Definition of IEP

According to Bailey (1994), an Individualised Education Plan (IEP) is "a document describing children's skills and stating goals for services as well as strategies for achieving those goals" This formal written document is required for a child to receive special education and related services.

The roles of the teacher in planning IEP

The educator's goal in teaching is to identify adaptive behaviours for each individual and to structure the educational environment carefully so that students will learn. Meeting this goal involves making sound

decisions about placement, assessment, the learner, curriculum, instruction and evaluation so that the student with intellectual disabilities,

- Acquires a wide variety of adaptive skills
- Learns when and where to use them
- Generalizes specific skills to other settings, and
- Maintains the skills over time.

The educator must keep these four objectives for the learner in mind. In this way, the tasks of the teacher and learner will complement each other.

Educational perspectives for people with disability in India

The origin of special education in India can be traced back to the era of Gurukul education, which adhered to the fundamental principles of special education. It took into account the following,

- Determining the strength and needs of each student
- Individualization of teaching targets and methods to match the skills and interest
- Preparing the pupils for meeting the societal expectations of their prospective roles
- Learning by doing
- Team work and cooperative learning
- Inquiry and problem solving

Indian legislation and IEP

There are four special legislations relating to persons with disabilities (PWD) and their rights in India which have been enacted by the Union Government so far. They are, the Mental Health Act, 1987, Rehabilitation Council of India Act, 1992, the persons with disabilities (Equal opportunities, protection of rights and Full participation) Act, 1995 (in short, the Persons with disabilities act or PWD Act). The National trust for Welfare of persons with Autism, Cerebral Palsy, Mental Retardation and multiple Disabilities Act, 1999.

All these laws derive their mandate from article 14 of the constitution of India, which states “the state shall not deny to any person equality before the law or the equal protection of the laws within the territory of India.” This means that every person living in this country has the fundamental right to be treated equally and to equal protection of law within the territory of India. Amongst the four acts mentioned above, it is the PWD Act, which contains the substantial provisions on the education of PWD.

National efforts taken towards educational access are

- Project for Integrated Education of the Disabled (PIED) and the Genesis of integrated Education for Disabled Children (IEDC) scheme.
- The role of National Council for Educational Research and Training (NCERT)
- The role of National Institute of Open Schooling (NIOS)

The provision of education for children with disabilities in special schools is still widely practiced. A majority of people, including professionals, teachers, and parents of children with and without intellectual disabilities believes that the special school is the most appropriate setting to educate children with intellectual disabilities. Ministry of social Justice and Empowerment provides financial assistance for establishment of special schools in the country. Inclusive education on the other hand, is funded by the Department of Education of the Ministry of Human Resource Development.

The educational provisions practiced in India are more or less similar to that of IEP of IDEA 1997. However, the IEPs in the USA have legal implications while in India, it is prepared with the wisdom of the teachers and the team members with the best intentions to provide education to the child. Therefore the educators in India are morally accountable for imparting education to the students with intellectual disabilities. So far, voluntary efforts with good will was responsible for the various educational models existing for children with intellectual disabilities, this country is dominated by following dharma and karma and people who are engaged in this profession are believed to be strongly governed by the above principle. With the 86th amendment of the constitution of India, primary education has become a fundamental right. Therefore legal

implications are in order if a child is deprived of appropriate education. The rules, regulations and procedures to ensure this are yet to be implemented.

Components of IEP

Individualised programmes are intended to serve as guiding document and function as an integral link between assessment and instructions. The development of IEP includes collection of assessment data, details the least restrictive and most appropriate placement and outlines the instructional programme. The IEP must be evaluated and rewritten annually as the student progress.

The major components of IEP include the following key features.

- General background information about the child
- Assessment of current level of functioning
- Annual goals
- Short term objectives
- Special Education and related services
- Evaluation procedure

General background information about the child

It is very important to collect the data which includes and general background information of the person. This information comprises the following.

- Family background
- Details about siblings
- Socio economic status
- Birth history
- Medical/developmental history
- Educational history
- Influence of associated conditions

This information is essential for the development of IEP as it pin points the special needs, the psycho-social environment and the supports

system available for the person. All this information is collected from both primary and secondary sources.

Assessment of current level of functioning

- The next key component is the assessment of current level of functioning. Assessment and curriculum are complexly interwoven, and separating them into different components may weaken the entire system. For the assessment of a student's present level of performance and an ongoing monitoring of student progress, several evaluative tools and procedures must be employed. However, there are several important considerations for curriculum development which can be considered while assessing current level of functioning which includes identifying prerequisite skills, learning styles and potential reinforcer.

The present levels of academic achievement and functional performance statement (commonly called "present levels") should cover all areas of development where the child may need support. Some examples are :

- Academic skills – math, reading, writing
- Daily living or self-help skills – Toileting, dressing, grooming, self feeding,
- Social skills – Interpersonal relations, making friends
- Behaviour – appropriate to context and situations
- Sensory skills – hearing, vision
- Communication skills – Expressive and receptive
- Mobility – getting around in school and the community
- Vocational skills – work related skills.

The present levels statement also includes information about how the child's associated condition affects his or her involvement in the special education. The information for the child's present levels comes from the tests and observations done during the child's assessment, if the child is new to special education. If the child's IEP is being revised, the information may come from evaluations done during the year.

A well-written present levels will describe :

- the child's strengths and needs
- what helps the child learn
- what limits or interferes with the child's learning
- objective data from current evaluations of the child and
- how the child's associated condition affects his or her ability to be involved and progress in the learning.

Annual goals and short term objectives

Annual goals and short term objectives are derived from assessment data. Annual goals are statements of what the student can reasonably be expected to achieve in the course of one academic year. Short term objectives are behaviourally stated objectives, based on the annual goals that provide a clear direction for instruction and ongoing evaluation of student progress.

After an individual student with intellectual disabilities has been thoroughly assessed and a list of strengths and needs has been generated, the identification of appropriate annual goals and short-term objectives will begin. The information is obtained from the assessment of special needs and the potentials are used as a guideline against which students' present levels of performance is assessed. Due to the disabilities, learners with intellectual disabilities will have many deficit areas that can be targeted for instruction. However, listing all possible instructional areas on an IEP is not possible. Only those objectives that might reasonably be taught to a student in one academic year should be included on the IEP. The problem is how to decide which of the potential goals and objectives should be included in the individual curriculum. Therefore, prioritizing the goals is a key factor in successful implementation on IEP and the learning by the student.

- The IDEA (1997) lists four characteristics of an annual goal: (Gibb & Dyches, 2000)
- It must be measureable
- It must tell what the student can reasonably accomplish in a year
- It must relate to helping the student be successful in the general education curriculum and / or address other educational needs resulting from the disability.

- It must be accompanied by benchmarks or short-term objectives.

The annual goals should reflect the educator's and the parents', best guess of what the student can reasonably achieve within a year. The following features can help determine realistic expectations :

Considerations for selecting annual goals

- ***Child's past achievement***

The past achievement of the child can be obtained by analyzing the earlier schooling, instructional methods, achievement records and student's behaviour patterns.

- ***Present level of performance***

It indicates child's strengths and needs, serves as the basis for educational programming. It can be obtained by assessing the child' chronological age, residual abilities and specific needs identified. For example, it is inappropriate to teach a 14 year old boy action songs of preschool to improve language skills. Instead, age appropriate story telling with flash cards/books or music suitable to his age can be chosen. Residual abilities are both physical and mental abilities present with the child. It is important to ascertain residual skills and match with prerequisite skills before teaching complex skills. Specific socio cultural needs are important considerations for setting goal as the educational programme is need based for person with intellectual disabilities. For example, it is a waste of time and energy if you select a goal to teach a child to use the knife, fork and observe table manners who has come from a rural background as he is less likely to use the skill.

- ***Applicability of the goal***

Goal should be selected based on frequently required to be performed in the home school and community of the child.

- ***Priority Needs of the child***

When there is more than one goal to be achieved, they must be prioritized. For example: if the child is not independent in bathing, toileting, feeding and dressing, you will have toileting and feeding as priority goal followed by dressing and bathing.

For a child who has destructive and self injurious behaviour and also has poor self care skills, priority will be to control his self injurious and destructive behaviours and then training in self care skills. The most immediate needs must be considered while setting goals. Again priority

goals may differ in home and school as the functions of the student in school and home differ. For example washing clothes usually will be a goal to be trained by the parent at home environment under teacher's guidance based on Resources Availability. The goal must be relevant to the resources (both human and material) available. Plan a programme keeping in mind what the available resources are. For example, there may be an elderly grandmother at home who will form as an excellent human resource in training the student for self care skills at home. A sibling will be a good resource for social skills, play and recreation if oriented and trained. As children with intellectual disabilities learn best in natural environment, as far as possible, use the material around the child, his home and neighbourhood to train him in skills as much as possible.

Short term objectives (STO)

Short term objectives are breaking down of large unit of instructions (annual goal) into smaller, more manageable units. The process of breaking down or translating the annual goal into short term goals/objectives follows 3 major forms of instructional analysis that can be useful for teachers. They are

- Procedural approach
- Hierarchical approach
- Combination approach
- *The procedural approach* is used when individual behaviours are taught consecutively to reach a specific objective. The series of behaviours included in a procedural analysis are independent of each other and often can be interchanged. One example of this approach is while teaching washing utensils, some teachers may require a student to wash all the utensils before rinsing. While other teachers may require their learners to wash each one and then rinse it before moving on to the next step. Each step is independent, and in some cases they can be interchanged depending on teacher's decision or student needs.
- *The hierarchical approach* involves identifying prerequisite skills and placing them in a hierarchical order leading to the desired objective. Academic skills generally are taught in this approach, each skill in the sequence being somewhat dependent upon the

previous skill. For example, while teaching math skills, counting precedes addition.

Finally, a logical extension of the two approaches is a combination of both.

- *The combination approach*, as described by Dick and Carey (1977) is useful when dealing with behaviours requiring a complex set of both psychomotor and cognitive skills.

The STO must be stated in behavioural terms. Behavioural terms refer to the terms which are observable, measurable and finite. They are observable because people can easily agree as to whether or not they have occurred, they are measurable since a quantitative measure can be taken as to the degree or strength of the demonstrated behaviour, and they are finite because they have definite points of beginning and ending in time. These parameters of observability, measurability, and finiteness are all useful yardsticks to assess whether the verb the teacher selects to describe behaviour is behavioural or not.

Writing behavioural objective

The short term objective is derived from the long term goal and is based on the current level of functioning of the student as the take off point.

A behavioural objective always comprises of 5 components They are

- Condition of learning (stimulus for the behaviour)
- Person involved
- Behaviour
- Criteria for mastery
- Duration

Current level of functioning: Vijay matches all colours. Does not identify any colour by name. Vijay is non verbal. His attention can be sustained in an activity.

EXAMPLE : In any given situation when red, yellow and green colour flash cards/objects are provided and when asked to point to red, green or yellow Viyay will do so at least 8 times out of 10 trials within a period of 3 month of training.

Here the

- Condition of learning is : In any given situation when red; yellow and green colour flash cards/objects are provided and asked to point to any of the three colours named,
- Person involved : Viyay
- Behaviour : will identify named colour correctly
- Criteria for mastery : at least 8 times out of 10 trials
- Duration : within a period of 3 month

We will discuss the main components of behavioural objective:

Condition of learning: In addition to precisely stating the behaviour which is to take place, the exact conditions under which that behaviour is to occur also must be specified. There are some situations in which a given behaviour could be perfectly acceptable, but completely unacceptable in another situation. For example, physical aggression in the boxing ring is acceptable whereas, physical aggression in the classroom is not acceptable. Thus, in order to avoid ambiguity as to when a given behaviour is or is not appropriate, it is important to explicitly state the conditions under which behaviour is expected to occur. The conditions of behaviour are particularly important since they specify the information, materials, and environment which will be provided to students who are expected to behave in certain ways, describing the conditions of behaviour outlines the environment in which learning and performance is expected to take places. Yet another major reason for describing the condition (stimulus) for a behaviour to occur (response) is that persons with intellectual disabilities do not know to take incidental cues. Therefore, they need to be trained to understand to situations and the expected behaviour in that given circumstances. Hence, mentioning the condition for an expected behaviour is of utmost importance while writing short term objective.

Behaviour : a behavioural objective should describe the behaviour that is expected to be performed by the student in observable measurable terms. Here the behaviours are precisely specified in terms of the expected response for a given stimulus. It is an accurate descriptions of the terminal behaviour.

The examples of observable behaviours can be :

To draw, to fold, to count, to eat, to repeat, to read, to select, to copy, to classify, to dress, to bathe, to brush teeth.

Not observable behaviours can be :

To know, to learn, to understand, to realize, to concentrate, to feel.

These terms need many interpretation and therefore inappropriate for stating as behavioural objective.

Criteria of mastery and duration: Another component of a well-written objective involves establishing the criteria for achievement. Here the teacher considers what criteria must be met before the learner will have adequate skills for progressing continuing to the next step in the learning hierarchy. The teacher can decide whether the criteria can be set to match the learner's strengths or needs. An erroneous conception is that 90% correct is a standard for mastery. This magical number may not be appropriate. Criteria set depends on the duration fixed for the training which is followed by the evaluation. Therefore if the evaluation will be once in 3 months, as in school programmes where quarterly evaluations are made, the criteria will be such that it needs training for that long a time. If the evaluation will be every 15 days as in centre based training where the parents are given a programme for 15 days to follow at home, the criteria set may be suited to that time period. Their trainer has the liberty to wisely make a decision on criteria, keeping in mind the duration and the context of training. Further, five different students in the same classroom could be working on the same annual goal and the same short-term objective, yet have varying criteria for success based on their individual needs.

All of you are familiar with **acquisition, maintenance and generalisation** of a skill. While setting criteria we are aiming at acquisition of the skill. Once acquired, by repeated practice, it gets maintained and gradually generalized to different contexts and situation. When you set criteria, in your IEP, you may expect 80% achievement. This is the acquisition phase. It is assumed that the child will reach a 100% by practicing the skill. So when 80% mastery is achieved, you will have the skill in maintenance phase by giving him repeated practice in the skill and simultaneously taking up the next priority objective to be

trained for acquisition. Thus you save on time by having one skill in maintenance phase and the new skill in acquisition phase. Finally all will be generalized allowing the student to independently exhibit the skill in any appropriate situation suitably.

Special Education and related services

Each IEP must contain statement of the type of special education services provided and who is responsible for providing those services. Related services refer to additional services such as speech or language therapy, or occupational, physiotherapy needed to ensure that the program meets all of the students needs. Related services may be delivered directly to the student or they may take the form of family services (e.g. parent training).

Related services can include, but are not limited to, any of the following :

- Assistive technology
- Audiology
- Counselling services
- Early identification
- Medical services
- Occupational therapy
- Orientation and mobility services
- Parent counselling/training
- Physio therapy
- Psychological services
- Speech-language pathology
- Transportation

Criteria and evaluation procedures

The final component of the IEP deals with program evaluation and outlines procedures from ongoing assessment of student behaviour. Criterion referenced test and behavioural observations, are used to measure the program's effectiveness in bringing about the desired change. Each IEP must contain a statement of the schedules for determining whether short term objectives are being met. Each IEP must

be reviewed at least annually to determine the appropriateness of the program and the student's progress toward the specified goals and objectives.

The main purpose of the evaluation procedure is to ascertain whether the behavioural objective has met the criteria or not. Another important process in evaluation procedure is to identify elements and conditions which are interfering in learning rather than in turn hindering in achieving the objective. Both process and product evaluation are required for this purpose.

The measurement unit chosen for each criterion for evaluation is dependent on how the data will be recorded. For example, when dealing with academic skills, teachers may wish to use a quantity measure such as percentages. As the number of problems or questions changes from day to day, the standard of percent correct can maintain a relatively stable measure, and thereby facilitate charting of progress. Expected level of performance answers one or more of the following questions.

1. For how long – Example: Vijay will bounce the ball for 2 minutes.
2. How many time – Example – Vijay will point to nose 8 out 10 times.
3. How often – Example – Vijay will change the calendar (date) once a day.

While evaluating the child for progress, the following points must be kept in mind.

- There should not be bias on the part of the teacher
- The analysis of the response should be qualitative and quantitative (50%, 80%) Qualitative, (does independently, needs cues, needs verbal prompt)
- There should be provision for written and verbal reports of the result obtained.
- The evaluation must be continuous and lead to further planning of programme for the child.

- The evaluation result of the previous IEP will be current level of next IEP.

The meaning, purpose and history and different components of IEP are discussed above. Special educator play key role in the development of IEP. She or he is the active decision maker for the effective educational programming of persons with intellectual disabilities.

Teachers have a major influence on the lives of their students. Some teachers are able to present material in orderly interesting ways to increase probability of learning. Thus, the answer to the question, what constitutes good teaching is not straightforward. If it were, there would surely be more effective teachers in special education class-rooms. Nevertheless, there does appear to be some clues as to what makes a good teacher. The attributes of a good teacher as stated by Ausubel, Montemayor & Svajian (1977) include selecting, sequencing, and organizing segments of instruction, skills of presentation, and the human/social skills of patience, fairness, and empathy while managing learning activities.

The format for writing IEP in Indian special educational system has two parts. In part A the detailed background history of the individual child is recorded. The part B consists of goals and corresponding procedure of teaching strategy. The details of IEP format will be discussed in the practical manual.

An individualised education program is not;

- A daily lesson plan that describes each little thing that will happen to a student while in a special education program.
- A report written by a clinical or educational psychologist to describe a student's strengths and needs.
- An agreement that promises all services that are needed will be provided or that guarantees that services that are provided will work.
- Inflexible
- A substitute for a report card or other daily weekly, or monthly progress reports.

- A formal contract that places legal obligations on the people who develop it or the parents and professionals who agree to it

The IEP is not an end of programme design rather the development of this plan is only the beginning. The IEP is a plan based on the identified needs of individual students with intellectual disabilities that establishes broad curricular goals and programme objectives.

Note : Some formats of IEP include the procedure and the material and other resources to be used for teaching. However, the minimum information required in an IEP is narrated here.

Check your progress

Notes: a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

4. Define IEP.

UNIT 10 VOCATIONAL TRAINING AND INDEPENDENT LIVING

Objectives

After going through this block, you will be able to:

- Plan for vocational training for CwID.
- Train CwID to live independently.

10.1 Vocational Training

The National Institute for the Mentally Handicapped carried out a survey of special education centers in the country. The first round was completed in August, 1987 which listed 286 institutions in the country, while the second round which was completed by December, 1988 added 62 more institutions, thus raising the strength to 348 special education centers in the country. The establishment of special education centres which began in early 1940's picked up momentum in 1960's. The analysis showed 169 (48.5%) of these institutions offered pre-vocational

training facilities, while 57 (16.4%) such centers had the facility of sheltered workshops.

Craft Activities

A visit to special schools or special education centers having the facilities of vocational training show that they impart training on specific trades like candle making, chalk making, caning of chairs, basket making, weaving, book binding, printing, making of envelopes, and greeting cards, etc. Such programmes can be described as craft activities and greeting cards, etc. Such programmes can be described as craft activities rather than any serious effort to train adult person with mental retardation in a vocation leading to employment or job placement.

The characteristics of such craft activities are as given below:

- a) Such programmes are aimed at keeping persons with mental retardation busy more as a recreational activity
- b) In most instances training if any, is incidental as no efforts are made to ensure efficiency, nor any quality controls are observed in the production.
- c) There are no production targets, nor any pressure is put on the mentally retarded trainees in the discipline of work, efficiency and quality output
- d) The craft activities have no profit motive. More importance is given on keeping him engaged and occupied.
- e) Such craft activities have no linkages with employment. Rarely, a few trainees may pick up proficiency in the craft activity, carry out the trade as self-employment and earn some money.

The products of such craft activities are proudly displayed in the special education centers. The quality of the products reflects more on the proficiency of the craft instructor rather than the mentally retarded trainees. Very often it is difficult to decipher the contribution of normal persons vis-à-vis that of mentally retarded person in the product. On the positive side, there are few examples of special schools who have converted such craft activities into profit making vocational training units under protected circumstances. For examples, a candle making is making profit because quota of wax is

allotted on subsidized rates. Caning of chairs has been a profit making activity because of patronage by a Government department. The success of basket making and weaving units can be attributed to enterprising families of the persons with mental retardation who have picked up the art of making baskets or dusters which could be sold in the market with marginal profit. Similarly, the units producing greetings or envelopes are isolated examples of making marginal profits. One may argue that vocational training centers are not designed to make profit, their activities are primarily geared towards training in the trade. However, following are the limitations of such vocational training programmes:

- a) Vocational training has no relationship with employment. In majority of the cases the candidate, who complete the training there have rarely a job waiting for them. Nor such people are trained to run self-employment units.
- b) Vocational trades taught at such centers are often complex and it takes a long time to master them.
- c) There is no fixed training period nor there is any formal graduation. Training continues as long as person with mental retardation continues to attend the centre or as long as the principal of the Centre desires him/her to continue.
- d) There is a lot of wastage of raw materials.
- e) Such units are mainly run by few trained persons with mental retardation who have attained a relatively high level of proficiency. Majority of the remaining persons with mental retardation play a secondary role and rarely reach some level of proficiency. If these 2 or 3 proficient persons are withdrawn, the production comes to a grinding halt.
- f) Because of low production, such units are not economically viable. Overhead costs are high, marginal profits may not meet even the cost of raw materials.
- g) Training is given in protected environment, employment outside these conditions is never thought of, as a result, there are limited opportunities for replication.
- h) The trades are chosen keeping in view what the persons with mental retardation can possibly learn and perform. Rarely any market survey is done to assess the market demand and tailor

the job to suit market conditions. Any training given on trades for which there is already saturation in the job market, is unlikely to generate employment.

Sheltered Workshop:

As mentioned earlier, the survey conducted by the National Institute for the mentally Handicapped showed that 16% of the special education centers had the facility of sheltered workshops. Typically the characteristics of such workshops are: (a) Protected atmosphere. (b) production-cum-training centre, (c) management is in the hands of normal persons, (d) there is emphasis on efficiency. (e) production targets are clearly laid out, and (f) the training leads to employment is the same workshop.

Some of the successful projects are located in south and western India which deal with (a) manufacture of toys, and teaching aids, (b) assembly work relating to telephone components, (c) laundry, (d) packaging, and (e) production of goods for home use like bakery, pickle, papad etc.

In spite of the fact that many such units have shown profit, the idea has not proliferated for the following reasons:

- a) Sheltered workshop projects are capital intensive and majority of the voluntary organizations running special education centers, rarely have the means and resources to start such projects,
- b) It requires a group of persons with a flair in industrial production and marketing who can train and organize persons with mental retardation into a profit making team,
- c) The trades of vocational training are limited as more emphasis is given on production and profit, and therefore, those persons who show promise are absorbed in the workshop itself. The employment opportunities cease as soon as optimal strength is recruited.
- d) Sheltered workshops rarely make profits so as to pay full wages to persons with mental retardation. Most organizers are scared of attracting sales tax, or shops and establishment act or provisions under industrial act.

NEW DIRECTIONS

Many new concepts have been reported in the recent literature. This is due to the efforts made by scientists to find new employment opportunities for persons with mental retardation.

Self Employment: Few isolated examples are available where a person with mental retardation has installed a handloom in his own house. Dusters produced by him have assured market in bank and educational institutions. Another example is of a pickle and papad unit. Similarly, packing units installed in home setting have yielded promising results. Needless to say, such production units cannot be run successfully without the help and assistance of parents in purchase of raw material and marketing of the finished products. The drawback of this scheme is that the mentally handicapped person becomes isolated and has no company. If he becomes moody, production targets cannot be maintained. The self-employment scheme has not been seriously tried by vocational trainers for mass application. It would be interesting to introduce a small variation in this concept so as to organize neighborhood cooperatives where 4 or 5 persons with mental retardation could join hands together to run a production unit under the supervision of apparent trainer or personnel.

Open Competitive Employment: This concept originated primarily in the United States which advocates equal opportunities and the right to work. For the first time terms like shelter, support, or protection are eliminated. Persons with mental retardation who are capable of working along with other persons are encouraged to take up employment on competition basis. Wages are fixed in accordance with the production. For example, if a normal person can produce on an average 1000 units, while the person with mental retardation produces 300 units on a given day: 30% of the normal wages is paid to the person with mental retardation. Few isolated trials have been made in India to employ mentally retarded persons under open competitive employment conditions successfully. In a toy manufacturing unit, of 12 persons with mental retardation who were initially taken as trainees, all of them are continuing the job. The wages paid to them are nearly one-third of what would have been paid to a normal person. The following problems come in the way for trying this concept in Indian setting.

- a) **Workmen's compensation act:** It is not clear whether adults with mental retardation will be protected under this act. For example, in case of loss of limb, while working in industrial set up, the lawyers can easily argue that the persons with mental retardation could not understand the safety precautions.
- b) **Contract:** An employment is a contract between the worker and the employer. Because of impairment of intellectual functioning, it cannot be said without reasonable doubt that an adult person with mental retardation understood the terms and conditions of employment. It is unlikely that the industrialists would offer a regular job to a person with mental retardation.
- c) **Shops and Establishment Act:** Those establishments not covered under industries are covered under shops and establishments act. The provisions of this act safeguard the interests of the workers by fixing the number of hours of duty, ensures continuity in service, and payment of wages fixed by the Government. Sympathetic shopkeepers may employ a person with mental retardation on trial basis for few months, but are reluctant to employ them on regular basis.
- d) **Employee's State Insurance Scheme:** Health insurance is provided to private establishments under this scheme. If a worker falls sick, free treatments is given. A small percentage of charges towards Employees State Insurance are deducted from the monthly salary of the employee. As Industrialists are not willing to take adult persons with mental retardation on regular basis, they will be denied the opportunity of the health insurance.
- e) **Unions:** In large industrial establishments, there are strong unions who would oppose any sympathetic consideration to persons with mental retardation. The industrialists therefore, fear that the unions may demand retardation. The industrialists therefore, fear that the unions may demand lowered target of production if persons with mental retardation are allowed any concessions.

TASKS AHEAD

One percent reservation: If the statements made by the Union Minister of Labour and Welfare as reported in the newspapers are any Indication. It is quite likely that one percent of jobs will be reserved by the Government of India for persons with mental retardation. This will be in

addition to the already existing three percent reservation for disabled persons. The scientists and professionals working in the care, managements, and training of persons with mental retardation must get ready to (a) identify jobs in the Government and public sector undertakings which can be performed by persons with mental retardation. (b) develop modules of training persons with mental retardation so that they can fulfill the requisite qualifications for employment and (c) conduct field trials so as to eliminate factors which impair or hamper satisfactory performance on the job. Earnest efforts must begin right now if this opportunity and goodwill is to be appropriately utilized.

Awareness and expectations: Very often professionals in their over enthusiasm and zealousness promote the concept that disabled persons can do anything or as well as a non disabled person can, provided the disabled person works hard and has the motivation to achieve something in life. Many a time this approach backfires. There are several examples of people having visual disability making unrealistic claims that they are suitable for all kinds of jobs and that blindness in no way can hamper their work. In actual reality this is not so. It is therefore important that realistic orientation be given to persons with disability so that they are made aware of their assets and liabilities. Such an orientation will not only help the disabled person to understand clearly what he can do and what he cannot do, but also help him in having suitable adjustment in job.

Support Services: Finding a suitable job and placing a person on the job is not enough. We must consider the needs of adult disabled person and the environment in which he lives. It has been reported that finding a job is very easy but retaining the job is difficult. Planners and trainers must provide not only the periodic support on the job but also look into recreational and leisure time activities. It may be more appropriate to encourage adults with mental retardation to form a social club in their own area where they can regularly meet and jointly undertake recreational and educational activities. These may range from seeing a movie to visiting the market for shopping or an industry to study the work atmosphere, availability of jobs etc. Such social clubs would provide opportunities for social interaction, but also would promote self-confidence and self advocacy.

All over the world, it is only in recent years that serious efforts have been made to train persons with mental retardation for suitable employment. In a developing country like India, because of over population, even able bodied persons find it hard to seek suitable employment. The attitude of the community, particularly the employers would require to be modified and changed. This can become possible if persons with mental retardation satisfactorily fulfill the needs of the employer and the community perceives them as useful members of the society. Professionals, Parents and persons with mental retardation should join hands to create such awareness. A lot of work in the area of vocational training, job placement, and employment requires to be done to realize such dreams.

Check your progress

- Notes:** a) Write your answer in the space given below.
b) Compare your answer with those given at the end of the unit.
3. Define IEP.

4. Mention the 5 components of a behavioural objective.

5. What are the related services for persons with intellectual disability?

LET US SUM UP

Based on the nature, intellectual disabilities are considered to be the most complicated disorder among all. Block-2 explained the definitions, types and characteristics of intellectual disabilities. The tools and areas of assessment of intellectual disabilities are described in this block. Teaching children with intellectual disabilities is a challenging task because of their sub-average intelligence. This block will help you to understand the various strategies for teaching the functional academics and social skills to persons with such disabilities. Since the severity

varies from person to person with intellectual disabilities, each person should be given individual attention in adaptations, assistive devices, education plan, life skills etc. Further, vocational training is also to be provided to them for their independent living.

GLOSSARY

ADL: Activities of Daily Living

Adaptation:

BFE: Barrier Free Environment

Behavioural Objective:

Care Group: Care group includes children with very low ability (bed ridden-profoundly retarded).

CBI: Centre Based Intervention

Early intervention: Early intervention means identifying and providing effective early support to children and young people who are at risk of poor outcomes.

Functional academics: 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.

Functional assessment: It is a continuous collaborative process that combines observing, asking meaningful questions, listening to family stories, and analyzing individual child skills and behaviors within naturally occurring everyday routines and activities across multiple situations and settings.

Ramp: a surface connecting a higher and a lower level; a slope: Wide ramps flanked the stairs at the entrance.

Intelligence Quotient (IQ): is a total score derived from a set of standardized tests or subtests designed to assess human intelligence.

Sheltered workshop: an organization or environment that employs people with disabilities separately from others.

ANSWERS TO CHECK YOUR PROGRESS

1. Intellectual disability, a condition characterised by significant limitation both in intellectual functioning (reasoning, learning, problem solving) and in adaptive behaviour which covers a range of every day, social and practical skills, including
 - (a) "specific learning disabilities" means a heterogeneous group of conditions wherein there is a deficit in processing language, spoken or written, that may manifest itself as a difficulty to comprehend, speak, read, write, spell, or to do mathematical calculations and includes such conditions as perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and developmental aphasia;
 - (b) "autism spectrum disorder" means a neuro-developmental condition typically appearing in the first three years of life that significantly affects a person's ability to communicate, understand relationships and relate to others, and is frequently associated with unusual or stereotypical rituals or behaviours.
2. The types of intellectual disability are:
 - i. Mild Intellectual Disability
 - ii. Moderate Intellectual Disability
 - iii. Severe Intellectual Disability
 - iv. Profound Intellectual Disability
3.
 - An adjustable writing table.
 - Clip boards or parallel rulers may be used to keep papers stabilised while writing.
 - Rubber grip balls attached to pen/pencil will be useful for holding the pen/pencil appropriately for writing.
 - Head pointers can be used for computer inputs for those who cannot use their fingers for writing but have head control and eye contact.
4. VAPS: Vocational Assessment and Programming System

5. Functional academics is 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.
6. According to Bailey (1994), an individualised Education Plan (IEP) is “a document describing children’s skills and stating goals for services as well as strategies for achieving those goals” This formal written document is required for a child to receive special education and related services.
7. A behavioural objective always comprises of 5 components They are
 - Condition of learning (stimulus for the behaviour)
 - Person involved
 - Behaviour
 - Criteria for mastery
 - Duration
8. Related services can include, but are not limited to, any of the following :
 - Assistive technology
 - Audiology
 - Counselling services
 - Early identification
 - Medical services
 - Occupational therapy
 - Orientation and mobility services
 - Parent counselling/training
 - Physio therapy
 - Psychological services
 - Speech-language pathology
 - Transportation

SUGGESTED READINGS

- Webster, J. (2019). Functional Skills: Skills to Help Special Education Students Gain Independence. <https://www.thoughtco.com>
- Corbett, A. (2018). Intellectual disability and psychotherapy. Routledge.
-
- Karra, A. (2013). Social Skills of Children with Intellectual Disability attending home based program and Children attending regular special schools- A Comparative Study. International Journal of Humanities and Social Science Invention. [http://www.ijhssi.org/papers/v2\(8\)/Version-3/K0283059063.pdf](http://www.ijhssi.org/papers/v2(8)/Version-3/K0283059063.pdf)
- Moyes, R.A. (2010). Building Sensory Friendly Classrooms to Support Children with Challenging Behaviors: Implementing Data Driven Strategies, Sensory World, Texas.
- Pierangelo, R., & Giuliani G.A. (2003). Transition services in Special Education, Allyn & Bacon.
- Reddy G.L., & Rama, R. (2000). Education of Children with Special Needs, New Delhi - Discovery Pub.
- Simpson, R. L., & Myles, B, S. (2008). Educating Children and Youth with Autism: Strategies for Effective Practice. (2nd edition) Pro Ed. Texas.
- Smith, D.D. (2003). Introduction to Special Education Teaching in an Age of opportunity, Allyn & Bacon.
- <http://niepid.nic.in/Vocational%20training%20employment.pdf>
- https://www.youtube.com/watch?v=K6WmGhY8Q4I&feature=emb_logo
- [https://www.cognizantfoundation.org/vocational-training-for-differently-abled.html#:~:text=The%20TTCs%20provide%20training%20to,\)~%2C%20Government%20of%20India%20examination.](https://www.cognizantfoundation.org/vocational-training-for-differently-abled.html#:~:text=The%20TTCs%20provide%20training%20to,)~%2C%20Government%20of%20India%20examination.)



TAMIL NADU OPEN UNIVERSITY
SCHOOL OF SPECIAL EDUCATION AND
REHABILITATION

SED-15

INTRODUCTION TO NEURO DEVELOPMENTAL DISABILITIES

BLOCK

3

**AUTISM SPECTRUM DISORDER: NATURE, NEEDS AND
INTERVENTION**

Unit 11

Definition, Types and Characteristics

Unit 12

Tools and Areas of Assessment

Unit 13

Instructional Approaches

Unit 14

Teaching Methods

Unit 15

Vocational Training and Career Opportunities

BLOCK 3 AUTISM SPECTRUM DISORDER: NATURE, NEEDS AND INTERVENTION

Block Structure

Introduction

Objectives

Unit 11 Definition, Types and Characteristics

 11.1 Definition of Autism

 11.2 Types of Autism Spectrum Disorders

 11.3 Characteristics of Autism Spectrum Disorder

Unit 12 Tools and Areas of Assessment

 12.1 Early Indicators

 12.2 Screening

 12.3 Types of Screening Tools

 12.4 Diagnostic Tools

Unit 13 Instructional Approaches

 13.1 Visual approaches

 13.2 Task analysis

Unit 14 Teaching Methods

 14.1 Applied Behaviour Analysis and Verbal Behaviour

 14.2 Relationship Development Intervention

 14.3 TEACCH (Treatment and Education of Autistic and
 Related Communication-Handicapped Children)

Unit 15 Vocational Training and Career Opportunities

 15.1 Vocational Training

 15.2 Career Opportunities

Let us Sum Up

Glossaries

Answers to Check your Progress

Suggested Readings

INTRODUCTION

In our everyday living, we come across the term autism and spectrum disorder frequently nowadays. Some of us have seen persons with autism and other similar disorders. This block shall help you to understand what autism spectrum disorder actually is.

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

Autism appears to have its roots in very early brain development. However, the most obvious signs of autism and symptoms of autism tend to emerge between 2 and 3 years of age. Both children and adults with autism typically show difficulties in verbal and non-verbal communication, social interactions, and leisure or play activities.

OBJECTIVES

After going through this block, you will be able to:

- Define Autism Spectrum Disorder
- Differentiate the types of autism
- Describe the characteristics of autism
- Explain the areas and tools of assessment of autism
- Describe the instructional and teaching methods of autism
- Justify the vocational and career opportunities for persons with autism spectrum disorder

UNIT 11 DEFINITION, TYPES AND CHARACTERISTICS

Objectives

After going through this block, you will be able to:

- Define autism.

- Differentiate the types of autism.
- Identify the characteristics of autism.

11.1 Definition of Autism

Autism Spectrum Disorder (ASD) is a developmental disorder that affects communication and behaviour. Although autism can be diagnosed at any age, it is said to be a “developmental disorder” because symptoms generally appear in the first two years of life.

According to the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*, a guide created by the American Psychiatric Association used to diagnose mental disorders, people with ASD have:

- Difficulty with communication and interaction with other people
- Restricted interests and repetitive behaviours
- Symptoms that hurt the person’s ability to function properly in school, work, and other areas of life

Autism is known as a “spectrum” disorder because there is wide variation in the type and severity of symptoms people experience. ASD occurs in all ethnic, racial, and economic groups. Although ASD can be a lifelong disorder, treatments and services can improve a person’s symptoms and ability to function. The American Academy of Paediatrics recommends that all children be screened for autism. All caregivers should talk to their doctor about ASD screening or evaluation.

National Trust Act-1999, India:

Autism means a condition of uneven skill development primarily affecting the communication and social abilities of a person, marked by repetitive and ritualistic behaviour.

RPWD Act-2016, India:

“Autism Spectrum Disorder” means a neuro-developmental condition typically appearing in the first three years of life that significantly affects a person’s ability to communicate, understand relationships and relate to others, and is frequently associated with unusual or stereotypical rituals or behaviours.

11.2 Types of Autism Spectrum Disorders

There are three different types of Autism Spectrum Disorders:

- **Autistic Disorder** (*also called "classic" Autism*)

This is what most people think of when hearing the word "autism." People with autistic disorder usually have significant language delays, social and communication challenges, and unusual behaviors and interests. Many people with autistic disorder also have intellectual disability.

- **Asperger Syndrome**

People with Asperger syndrome usually have some milder symptoms of autistic disorder. They might have social challenges and unusual behaviours and interests. However, they typically do not have problems with language or intellectual disability.

- **Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS; also called "atypical autism")**

People who meet some of the criteria for autistic disorder or Asperger syndrome, but not all, may be diagnosed with PDD-NOS. People with PDD-NOS usually have fewer and milder symptoms than those with autistic disorder. The symptoms might cause only social and communication challenges.

11.3 Characteristics of Autism Spectrum Disorder

People with ASD have difficulty with social communication and interaction, restricted interests, and repetitive behaviours. The list below gives some examples of the types of behaviours that are seen in people diagnosed with ASD. Not all people with ASD will show all behaviours, but most will show several.

a) Social communication / interaction behaviours may include:

- Making little or inconsistent eye contact
- Tending not to look at or listen to people
- Rarely sharing enjoyment of objects or activities by pointing or showing things to others

- Failing to, or being slow to, respond to someone calling their name or to other verbal attempts to gain attention
- Having difficulties with the back and forth of conversation
- Often talking at length about a favourite subject without noticing that others are not interested or without giving others a chance to respond
- Having facial expressions, movements, and gestures that do not match with what is being said
- Having an unusual tone of voice that may sound sing-song or flat or robot-like
- Having trouble understanding another person's point of view or being unable to predict or understand other people's actions

b) Restrictive / repetitive behaviours may include:

- Repeating certain behaviours or having unusual behaviours. For example, repeating words or phrases, a behaviour called *echolalia*
- Having a lasting intense interest in certain topics, such as numbers, details, or facts
- Having overly focused interests, such as with moving objects or parts of objects
- Getting upset by slight changes in a routine
- Being more or less sensitive than other people to sensory input, such as light, noise, clothing, or temperature

People with ASD may also experience sleep problems and irritability. Although people with ASD experience many challenges, they may also have much strength, including:

- Being able to learn things in detail and remember information for long periods of time
- Being strong visual and auditory learners
- Excelling in math, science, music, or art

c) Characteristics of ASD as seen in the Classroom

Area of Impairment	The Pupil
Social Skills	<ul style="list-style-type: none"> • demonstrates difficulties interacting with peers and adults • has difficulty reading and understanding social cues or situations • withdraws from or provides unusual responses in social situations • engages in play that is lacking in the imaginative qualities of social play
Communication Skills	<ul style="list-style-type: none"> • has difficulty communicating thoughts and needs both verbally and non-verbally • has difficulty with non-verbal communication, such as use of gestures, pictures, eye contact, and facial expressions • uses speech that includes repetitive, echolalic, or unusual language
Behaviour	<ul style="list-style-type: none"> • displays obsessions or preoccupations with specific themes or objects • likes order and may line up toys repeatedly • engages in unusual behaviours, such as rocking, spinning, or hand flapping • gets extremely upset with changes in routine or schedules • has an unusual response to loud noises or other sensory stimuli

Check your progress

- Notes:** a) Write your answer in the space given below.
- b) Compare your answer with those given at the end of the unit.
1. What are the strengths of persons with ASD?

UNIT 12 TOOLS AND AREAS OF ASSESSMENT

Objectives

After going through this block, you will be able to:

- Apply tools for assessing autism.
- Identify areas of assessing autism.

In most cases, a stable diagnosis of ASD is possible before or around a child's second birthday (Chawarska, Klin, Paul, Macari, & Volkmar, 2009). An early, accurate diagnosis can help families access appropriate services, provide a common language across interdisciplinary teams, and establish a framework for families and caregivers within which to understand the child's difficulties. Any diagnosis of ASD, particularly of young children, is periodically reviewed, as diagnostic categories and conclusions may change as the child develops.

Interdisciplinary collaboration and family involvement are essential in assessing and diagnosing ASD; the SLP is a key member of a multidisciplinary team. In diagnosing ASD, it is important to have clinical experts agree that assessment results are consistent with the diagnostic characteristics of the disorder.

12.1 Early Indicators

There is evidence to suggest that diagnostic features of ASD are evident in very young children. Most families/caregivers report observing

symptoms within the first 2 years of life and typically express concern by 18 months of age. Studies of children with ASD have found

- parental reports of abnormalities in their children's language development and social relatedness were first noticed at about 14 months of age;
- displays of significantly fewer joint attention and communication behaviors at 1 year of age than shown by their typically developing same-age peers;
- demonstrated atypical eye contact, passivity, decreased activity level, and delayed language by 12 months of age;
- subtle differences in sensory-motor and social behavior as well as differences in the use of communicative gestures by 9 to 12 months of age;
- a decline (from normative levels) in eye fixation from 2 to 6 months of age not observed in infants who did not develop autism.

The identification of early behavioral indicators can help families obtain appropriate diagnostic referrals and access early intervention services, even before a definitive diagnosis is made. Furthermore, early intervention can improve long-term outcomes for many children.

There is research on the use of screening tools, including a broadband screener to identify communication delays (including ASD) in children from 9 to 24 months of age and questionnaire-based tools to screen for children at risk for ASD as early as 12 months of age. There are also a number of algorithms and tools available to help physicians develop a strategy for early identification of children with ASD.

12.2 Screening

Screening for ASD includes broadband screeners designed to detect developmental delays in the general paediatric population and autism-specific screening tools designed for either the general population or high-risk populations, such as children referred to the early intervention system. Any screening tool should have strong psychometric features to support its accuracy and be culturally and linguistically appropriate.

Screening typically includes

- norm-referenced parent and teacher report measures,

- competency-based tools, such as interviews and observations,
- hearing screening to rule out hearing loss as a contributing factor to communication and behaviour difficulties.

Screening procedures evaluate the main characteristics that differentiate ASD from other developmental disorders, including difficulties in

- eye gaze,
- orienting to one's name,
- pointing to or showing objects of interest,
- pretend play,
- imitation,
- nonverbal communication,
- language development.

Social communication norms vary across cultures. When screening is conducted for non-linguistic aspects of communication, it is important to recognize when differences are related to cultural variances rather than secondary to a communication disorder.

Loss of language or social skills at any age should be considered grounds for screening. In cases where children are being raised in a bilingual environment, consider whether language loss is attributable to language attrition.

As children with ASD are often initially suspected of having a hearing problem, audiologists play a critical role in recognizing possible signs of ASD in children whose hearing they test and making appropriate referrals for screening and diagnosis of ASD.

12.3 Types of Screening Tools

There are many different developmental screening tools that may be administered by professionals, community service providers, and in some cases, parents. These include:

- Ages and Stages Questionnaires (ASQ)
This is a general developmental screening tool. Parent-completed questionnaire; series of 19 age-specific questionnaires screening communication, gross motor, fine motor, problem-solving, and personal adaptive skills; results in a pass/fail score for domains.
- Communication and Symbolic Behaviour Scales (CSBS)
Standardized tool for screening of communication and symbolic abilities up to the 24-month level; the Infant Toddler Checklist is a 1-page, parent-completed screening tool.
- Parents' Evaluation of Developmental Status (PEDS)
This is a general developmental screening tool. Parent-interview form; screens for developmental and behavioral problems needing further evaluation; single response form used for all ages; may be useful as a surveillance tool.
- Modified Checklist for Autism in Toddlers (MCHAT)
Parent-completed questionnaire designed to identify children at risk for autism in the general population.
- Screening Tool for Autism in Toddlers and Young Children (STAT)
This is an interactive screening tool designed for children when developmental concerns are suspected. It consists of 12 activities assessing play, communication, and imitation skills and takes 20 minutes to administer.

12.4 Diagnostic Tools

There are many tools to assess ASD in young children, but no single tool should be used as the basis for diagnosis. Diagnostic tools usually rely on two main sources of information—parents' or caregivers' descriptions of their child's development and a professional's observation of the child's behaviour.

In some cases, the primary care provider might choose to refer the child and family to a specialist for further assessment and diagnosis. Such specialists include neurodevelopmental paediatricians, developmental-

behavioural paediatricians, child neurologists, geneticists, and early intervention programs that provide assessment services.

Selected examples of diagnostic tools:

- **Autism Diagnosis Interview – Revised (ADI-R)**

A clinical diagnostic instrument for assessing autism in children and adults. The instrument focuses on behaviour in three main areas: reciprocal social interaction; communication and language; and restricted and repetitive, stereotyped interests and behaviours. The ADI-R is appropriate for children and adults with mental ages about 18 months and above.
- **Autism Diagnostic Observation Schedule – Generic (ADOS-G)**

A semi-structured, standardized assessment of social interaction, communication, play, and imaginative use of materials for individuals suspected of having ASD. The observational schedule consists of four 30-minute modules, each designed to be administered to different individuals according to their level of expressive language.
- **Childhood Autism Rating Scale (CARS)**

There are brief assessment suitable for use with any child over 2 years of age. CARS includes items drawn from five prominent systems for diagnosing autism; each item covers a particular characteristic, ability, or behaviour.
- **Gilliam Autism Rating Scale – Second Edition (GARS-2)**

Assists teachers, parents, and clinicians in identifying and diagnosing autism in individuals ages 3 through 22. It also helps estimate the severity of the child's disorder.

In addition to the tools above, the American Psychiatric Association's Diagnostic and Statistical Manual, Fifth Edition (DSM-5) provides standardized criteria to help diagnose ASD.

Check your progress

Notes: a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

2. Define autism spectrum disorder as per RPWD Act 2016.

3. Mention the types of autism screening tools.

UNIT 13 INSTRUCTIONAL APPROACHES

Objectives

After going through this block, you will be able to:

- Identify various instructional approaches for autism.
- Implement different instructional approaches for autism.

13.1 Visual approaches

The most strongly recommended approach for teaching students with ASD is to use visual aids. Students often demonstrate relative strengths in concrete thinking, rote memory, and understanding of visual-spatial relationships, but have difficulties in abstract thinking, social cognition, communication, and attention. Pictographic and written cues can often help the student to learn, communicate, and develop self-control. An advantage of visual aids is that students can use them for as long as they need to process the information. In contrast, oral information is transient: once said, the message is no longer available. Oral information may pose problems for students who have difficulty or require extra time to process language. In addition, it may be difficult for the student with ASD to attend to relevant information and to block out background stimulation.

Using visual supports better enables the individual to focus on the message. Visual aids and symbols range in complexity from simple and concrete to abstract. The continuum moves from real object or situation, to colour photograph, colour picture, black and white picture, line drawing, and finally to graphic symbol and written language. Objects are the most simple, concrete form of visual aid. Graphic symbols, although far along the continuum in terms of complexity and abstraction, have been widely successful with students with ASD.

Software packages that provide quick access to graphic symbols and the ability to create customized symbols are available (eg. Board maker). Visual supports can be used in the classroom in a variety of ways. To be successful, they must fit the student's level of comprehension by being at the appropriate point on the continuum of complexity mentioned in the preceding paragraph. Using a line drawing to support learning when the student needs colour photographs in order to comprehend will only frustrate everyone.

Taking this caution into account, visual supports are useful and can be employed to:

- organize the student activity with daily schedules, mini schedules, activity checklists, calendars, choice boards
- provide directions or instructions for students using visual display of classroom assignments, file cards with directions for specific tasks and activities, pictographs and written instructions for learning new information
- assist the student in understanding the organization of the environment by labeling of objects, containers, signs, lists, charts, and messages
- support appropriate behaviour by following posted rules and representations to signal steps of routines
- teach social skills using pictorial representations of social stories depicting a social situation with the social cues and appropriate responses, developed for a specific situation for the individual student
- teach self-control by using pictographs, which provide a cue for behaviour expectations

- teach functional self-help skills through cooking, safety, shopping, community access. The key question when planning an activity or giving an instruction is, How can this information be presented in a simple visual format? Choose visual aids on the basis of an understanding of the students' abilities and responses.

13.2 Task analysis

Teachers and parents may need to break complex tasks down into sub-tasks and reinforce in small, teachable steps. For each step of a complex task, the student needs to have pre-requisite skills. These sub-skills may need to be taught and reinforced in sequence. For example, when teaching a self-help skill such as brushing teeth, the task may need to be broken down into sub-skills, getting the toothbrush and toothpaste, turning on the water, wetting the toothbrush, unscrewing the lid of the toothpaste, putting the toothpaste on the toothbrush, etc. Life skills, social skills, and academic skills can all be analysed and approached as tasks and sub-tasks, with each step taught and then linked to the next in a chain of sub-tasks.

Discrete trial methods

Discrete trial training involves teaching skills in small units called trials. Each trial consists of an instruction, a prompt, a response from the student, and a consequence or feedback. The instruction is given in simple, clear language that the student can understand. Prompts can range from intrusive to subtle. Feedback is given immediately following the student response and is specific to the response. Feedback is meant to be informative for the student. For example, if the student responds correctly with good attention, positive reinforcement is given (Great paying attention!) with or without a tangible reinforcer. If the student makes an attempt but is incorrect, specific feedback is given (Good try, but....). If there is no response, feedback is still given to let the student know that more attention is necessary (Uh-oh, you need to pay attention). Approximately 3-5 seconds are allowed following the instruction to give the student time to process the direction. A few seconds are allowed between trials in order to separate each trial.

Using prompts to help students learn is an important element of instruction for some students with ASD. Prompts may be physical, gestural, positional, or verbal. They should be used only as long as they are needed, since students can become dependent on them. The prompt is given following the direction when the student seems to need a cue to perform correctly or when learning a new skill. The prompt is often designed to model the desired behaviour or assist the student in performing it. The least intrusive level of prompting should be used with the goal to fade all prompting as soon as possible as trials progress. Prompted trials should be followed by an unprompted trial to see if the student has learned from the prompt. The best reinforce mentor consequence is given to the student for a correct unprompted trial.

Precise, positive praise while the student is learning

Give students precise information about what they do right or well, such as, great colouring, or good finishing that math problem. Generalized praise such as good job may result in unintended learning that is hard to reverse. Students with ASD may learn on one trial, so directing the praise to the very specific behaviour is important. (Example: Raju, you are doing very well at multiplying these numbers.) Inappropriate learning can occur if students mistakenly connect something they are doing with the praise. Saying Raju, you are doing very well, • when Raju is also swinging his feet while he does the math assignment might connect the feet swinging with the general praise.

Meaningful reinforcements

Reinforcers can be anything from praise to tangible objects that increases the behaviour the student is to learn. Students with ASD may not be motivated by common reinforcers that work with other students. They may prefer some time spent alone, time to talk to a preferred staff member, a trip to the cafeteria, an exercise routine (such as going for a walk), time to play with a desired object, music, playing in water, getting to perform a favourite routine, items that provide specific sensory stimulation, or sitting at the window. Knowing what works as reinforcement for each student is important. A preference profile identifying the student preferred activities or other reinforcers can be helpful. This likes and dislikes list can be developed with the help of the family, and can be shared with all service providers.

Tasks at an appropriate level of difficulty

Students with ASD may be particularly vulnerable to anxiety and intolerant of feelings of frustration if they cannot perform the tasks assigned. Increasing the level of difficulty gradually and scaffolding or supporting learning, particularly with visual information rather than solely oral explanations, assists in minimizing the student frustration.

Age-appropriate materials

The choice of appropriate instructional materials honours the dignity of students with ASD. Even if the instruction must be modified, the learning materials should be appropriate to the age of the student.

Opportunities for choice

Students with ASD may be frustrated by their inability to make themselves understood, they need instruction and practice in making good choices for themselves. Their lives may necessarily be highly structured and controlled by adults. Sometimes students continue to choose one activity or object because they do not know how to choose another. Acceptable methods of providing choice for students who have limited ability to communicate are developed on an individual basis. Direct teaching of making choices may be helpful. A choice-board may be beneficial for the student. Choice should be limited to one or two preferred activities until the student grasps the concept of choice. Open-ended choices will not enhance the student skill at making choices, and may frustrate him.

Oral instructions into small steps

When providing instruction to students with ASD, teachers should avoid long strings of verbal information and complex or vague instruction. For example, when instructing a student to ready for the bus, numerous short instructions may be necessary (ie: get your school bag, go to your place, get your books, etc). As discussed above, supporting oral instruction with visual cues and representations helps students to understand and leads to more independent performance of skills.

Processing and pacing issues

Students with ASD may need more time to respond to directions or questions than other students. This difficulty may be linked to cognitive and/or motor difficulties. Students with ASD may need to process each discrete piece of the message or request, and therefore need extra time to respond. Providing extra time, and allowing for ample time between giving instructions and student response are both important tactics for supporting students with ASD.

Concrete examples and hands-on activities

Teach abstract ideas and conceptual thinking using specific examples. Vary the examples so that the concept is not accidentally learned as applying in only one way. For example, when teaching emotions, use pictures of a number of different faces for a particular emotion in a number of different scenarios.

Introduce unfamiliar tasks in a familiar environment

New concepts should be introduced in the student as class, home, or some other environment in which the student is comfortable. When it is not possible to introduce unfamiliar tasks in a familiar environment, prepare the individual for the new task and environment using aids such as pictures, videotapes, and/or social stories.

Highlight what is important

Use organization aids and visual supports to:

- help the student attend to pertinent information, and
- teach new tasks.

For example, remove extraneous materials from the desk or table before attempting to teach a skill. Present only the text you want read rather than the whole book. Highlight the key words, such as character names in the text, so they are noticed. Encourage independent effort and incorporate proactive measures to reduce the likelihood of becoming dependent on prompts/adults when students with ASD are constantly supported, they may never develop the capacity to act independently. Since independence is a desired goal for all students, instruction should include strategies to decrease the need for adult prompting.

Strategies include:

- using visual aids to decrease reliance on physical and verbal prompts (for example, a sheet of paper indicating by word and picture the material necessary for a class, requires the student to circle the needed items)
- planning ways to fade prompts
- ensuring that the adult is not always positioned close to the student and that the same adults are not always present, as positioning the adult away from the student may help to avoid dependency
- providing instruction to increase the student's awareness of environmental cues
- teaching in the environments containing the cues and reinforcement that prompt and maintain the behaviour

Direct and broaden fixation into useful activities

If the student is fixated on an object or a topic, such as a colour or shape, use it to teach a concept. A whole week's worth of learning activities in writing and math can be centered on one topic. This approach is creative, theme-based learning activities have been taken to the extreme.

Know the individual, and maintain a list of strengths and interests

Family members can provide valuable information for teachers about what students know and do at home or in the community. These interests and skills can be built upon both for instruction and for reinforcing successful learning and behaviour. A home to school journal can be used to exchange such information.

Talent and interest areas

If the student demonstrates a particular interest and strength in a specific area (e.g., music, drama, art, graphics, computer), provide opportunities to develop further expertise in that area. This may not only provide enjoyment and success, but may also lead to the development of skills for future employment.

Check your progress

- Notes:** a) Write your answer in the space given below.
- b) Compare your answer with those given at the end of the unit.
4. Mention two areas where visual supports can be employed.

UNIT 14 TEACHING METHODS

Objectives

After going through this block, you will be able to:

- Practice different teaching methods for autism.
- Work out plans for different teaching methods for autism.

A person with autism generally has language, communications, social, and cognitive skills problems. Due to these difficulties, children with autism learn better with visual aids, imitation and structured environments that accommodate their sensory sensitivities and routines. The visual aids combined with demonstrations of different activities can help a child improve language skills.

Interaction with other children can be encouraged through games, which allow some autistic children to accept a social interaction. A structured environment can make the child feel secure and more open to learning. The structure also prevents anxiety from exposure to any sensory triggers or confusion. Autism experts have developed a number of educational therapy and teaching methods that consider the unique needs of autistic children.

Autism Teaching Methods:

14.1 Applied Behaviour Analysis and Verbal Behaviour

Applied Behaviour Analysis, or ABA, is a method of teaching children with autism and Pervasive Developmental Disorders. It is based on the

premise that appropriate behaviour – including speech, academics and life skills – can be taught using scientific principles.

ABA assumes that children are more likely to repeat behaviours or responses that are rewarded (or "reinforced"), and they are less likely to continue behaviours that are not rewarded. Eventually, the reinforcement is reduced so that the child can learn without constant rewards.

Research shows that ABA works for kids with autism. "Thirty years of research demonstrated the efficacy of applied behavioural methods in reducing inappropriate behaviour and in increasing communication, learning, and appropriate social behaviour," according to a U.S. Surgeon General's Report.

The most well-known form of ABA is discrete trial training (DTT). Skills are broken down into the smallest tasks and taught individually. Discrete, or separate, trials may be used to teach eye contact, imitation, fine motor skills, self-help, academics, language and conversation. Students start with learning small skills, and gradually learn more complicated skills as each smaller one is mastered.

If a therapist is trying to teach imitation skills, for example, she may give a command, such as "Do this," while tapping the table. The child is then expected to tap the table. If the child succeeds, he receives positive reinforcement, such as a raisin, a toy or praise. If the child fails, then the therapist may say, "No." The therapist then pauses before repeating the same command, ensuring that each trial is separate or discrete. The therapist also will use a prompt - such as physically helping the child tap the table - if the child responds incorrectly twice in a row. This "no-no-prompt" method is used in some traditional ABA programs.

However, many ABA programs now use prompts for every trial, so the child is always correct and always reinforced by praise or a toy. This technique is called "errorless learning." The child will not be told "no" for mistakes but rather will be guided to the correct response every time. The prompts will be gradually reduced (or "faded," in ABA language), so the child will learn the correct response on his own.

ABA may take place in the home or a school. A consultant or board certified behaviour analyst, usually someone with a Master's or Doctoral degree in Psychology often supervises the therapy.

Some people incorrectly assume that ABA only describes the method developed by Dr. O. Ivar Lovaas, a pioneering researcher in the Psychology Department at UCLA. Lovaas developed one form of ABA. In 1987, he published a study showing that nine of the 19 preschoolers involved in intensive behavioural intervention 40 hours per week of one-on-one therapy, achieved "normal functioning" by first grade. Note: Several decades ago, Lovaas described using mild physical punishment for severe behaviours during therapy sessions. He later rejected punishment, and modern behavior therapists do not use it. Dr. Lovaas, 83, died in 2010.

ABA programs usually draw upon Lovaas's decades of research, but they also may incorporate different methods and tools.

Applied Verbal Behavior or VB is the latest style of ABA. It uses B. F. Skinner's 1957 analysis of Verbal Behavior to teach and reinforce speech, along with other skills. Skinner described categories of speech, or verbal behavior:

- Mands are requests ("I want a drink.")
- Echoes are verbal imitations, ("Hi")
- Tacts are labels ("toy," "elephant") and
- Intraverbals are conversational responses. ("What do you want?")

A VB program will focus on getting a child to realize that language will get him what he wants, when he wants it. Requesting is often one of the first verbal skills taught. Children are taught to use language to communicate, rather than just to label items. Learning how to make requests also should improve behavior. Some parents say VB is a more natural form of ABA.

Like many, Lovaas ABA programs, a VB program will use errorless teaching methods, prompts that are later reduced, and discrete trial training. Behavior analysts Dr. Vincent Carbone, Dr. Mark Sundberg and Dr. James Partington have helped popularize this approach.

One drawback to ABA/VB: some school districts and insurance companies do not pay for it, and it can be expensive for parents to fund. If you decide to pay for it yourself, carefully research the credentials of anyone claiming to be an ABA or VB consultant or experienced therapist. A consultant should have, at a minimum, a Master's degree in Psychology or ABA, or should be closely supervised by someone who does. When hiring therapists, some families find volunteers or students willing to work for lower pay in order to gain experience with autism.

14.2 Relationship Development Intervention

Relationship Development Intervention (RDI®) is a parent-based clinical treatment that tries to fix the social problems at the heart of autism, such as friendship skills, empathy and the desire to share personal experiences with others. Psychologist Steven Gutstein developed RDI with his wife, Dr. Rachelle Sheely. Their approach takes into account the ways in which typically-developing children learn how to have emotional relationships beginning in infancy.

RDI tries to help children interact positively with other people, even without language. When children learn the value and joy of personal relationships, according to RDI, they will find it easier to learn language and social skills. RDI is based on the idea that children with autism missed some or many of the typical social development milestones as infants and toddlers. They can be given a "second chance" to learn these skills through play, "guided participation" and other activities, according to RDI.

Here's an example of RDI in action: "The adult holds a treat in one closed fist, displays both closed fists to the child, and then looks at the hand that holds the treat. The child is given repeated opportunities to 'find' the treat in the hand the adult looks at," according to the Handbook of Autism and Pervasive Developmental Disorders

Early research of RDI's effectiveness published in 2005 indicates that RDI may be more effective than some other treatments. When compared to a control group with autism, children whose families participated in RDI showed greater improvement on the Autism Diagnostic Observation Schedule and more independence at school. Dr. Gutstein acknowledges that more research needs to be done of his method, which is relatively new. It was first publicized in 2001.

Some families are using RDI in addition to ABA and other teaching methods. About 5,000 families were receiving RDI in 2009, according to RDI connect. A goal of the family-centered program is "normalization of family life for all members."

Considerations: RDI is more often used in homes than schools, though that is changing. RDI-certified consultants can be expensive. More research needs to be done on RDI.

Sensory Integration Therapy

All children learn about the world through their senses. Children with autism spectrum disorders, however, often have unusual responses to the senses of hearing, sight, touch, smell and/or movement. These responses can interfere with learning and affect behaviour.

Children with autism spectrum disorders may over-react or under-react to things they hear, see, taste and touch. "Thus, they may be suspected of being deaf or visually impaired. It is common for such young children to be referred for hearing and vision tests. Some children avoid gentle physical contact, yet react with pleasure to rough-and-tumble games. Some children carry food preferences to extremes, with favored foods eaten to excess. Some children limit their diet to a small selection," according to the National Information Center for Children and Youth with Disabilities.

Is your child extremely sensitive to certain noises, bright lights, food textures or crowds? Does he look out of the corners of his eyes? Is he afraid of swings or very clumsy? Does she spin for hours without feeling dizzy? Does he dislike being touched or hugged unless he initiates it? Is

he unusually irritated by tags or seams on his clothes? Does he refuse to wear a coat and make a huge fuss over socks and shoes? Does he have an unusually high or low tolerance for pain?

These may be signs of Sensory Processing Disorder, also known as Sensory Integration Dysfunction. Sensory processing problems are common among children with autism, Pervasive Developmental Disorder and Asperger's Syndrome. However, sensory problems alone do not mean a child has an autism spectrum disorder. Some children have a sensory processing disorder only, but no other diagnosis.

The theory of sensory integration was developed by occupational therapist A. Jean Ayres Ph.D. In the 1970s, Sensory integration occurs when our brains organize the information from our senses for our use.

For some people, sensory integration does not develop properly. Sounds, sights and movement may seem more chaotic, more distracting and stronger than they do to others. Balance and coordination may also be a problem.

Because of these sensory problems, a child may avoid the playful, sensory-rich experiences that are natural building blocks to learning and developing relationships, according to occupational therapist Tara Delaney in 101 Games and Activities for Children With Autism, Asperger's and Sensory Processing Disorders.

Occupational therapists (OTs) who are trained in sensory techniques will engage a child in playful activities designed to help him process the information he receives from his senses in a more typical manner.

The therapist may work with the child in a room with platform swings, large exercise balls and other equipment. "The goal of therapy is not to teach skills, but to follow the child's lead and artfully select and modify activities according to the child's responses," according to Marie DiMatties and Jennifer Sammons at The Council for Exceptional Children.

The therapist can develop a treatment plan for a child that a parent can also follow at home, often using common household items. The child may need to play with different textures (such as sand, play-dough or shaving cream), to swing, to chew on a special chewy tube, or to sit atop large sensory ball. The activities should be just challenging enough to help the child respond better to sensory information without feeling overwhelmed.

Activities to improve focus and to calm the child can be built into his day. "How Does Your Engine Run? Program is a step-by-step method that teaches children simple changes to their daily routine, such as a brisk walk, jumping on a trampoline before doing their homework, and listening to calming music, that will help them self-regulate or keep their engine running 'just right.' Through the use of charts, worksheets, and activities, the child is guided in improving awareness and using self-regulation strategies," according to DiMatties and Sammons.

Children with autism, PDD and Asperger's Syndrome may receive free physical and occupational therapy at their public schools or through their state's early intervention program. Parents can ask their school system to evaluate their child to see if he qualifies for these services, including sensory integration activities.

At school, an occupational therapist also may work with the child to improve his fine motor skills (holding a pencil, using scissors, handwriting) and self-help skills (using buttons, zippers and silverware). A physical therapist may work on gross motor skills such as running, balance and climbing.

Sensory Integration Therapy is almost never offered as a sole treatment for autism spectrum disorder; instead, it may be a piece of a larger program.

Some studies show a benefit from Sensory Integration Therapy while other studies do not. A small study released in 2008 by Temple University researchers found that children with autism spectrum disorders who had sensory integration therapy had fewer "autistic mannerisms" than children who received fine motor therapy alone.

Sensory integration treatment can be expensive if not covered by medical insurance or provided by the school or early intervention office. Some insurance plans will not cover sensory integration therapy, but they may cover therapy that focuses on motor skills.

Remember, a child's "occupation" is play and learning about the world.

14.3 TEACCH (Treatment and Education of Autistic and Related Communication-Handicapped Children)

TEACCH was developed by psychologist Eric Schopler at the University of North Carolina in the 1960s; it is used by many public school systems today. A TEACCH classroom is structured, with separate, defined areas for each task, such as individual work, group activities, and play. It relies heavily on visual learning, strength for many children with autism and PDD. The children use schedules made up of pictures and/or words to order their day and to help them move smoothly between activities. Children with autism may find it difficult to make transitions between activities and places without schedules.

Young children may sit at a work station and be required to complete certain activities, such as matching pictures or letters. The finished assignments are then placed in a container. Children may use picture communication symbols, small laminated squares that contain a symbol and a word to answer questions and request items from their teacher. The symbols help relieve frustration for nonverbal children while helping those who are starting to speak to recall and say the words they want.

This method of "structured teaching" is often less intensive than Applied Behavior Analysis or Verbal Behavior programs in the preschool years.

According to information previously published on its web site, TEACCH respects "the culture of autism" and embraces a philosophy that people with autism have "characteristics that are different, but not necessarily inferior, to the rest of us." It says, "The person is the priority, rather than any philosophical notion like inclusion, discrete trial training, facilitated communication, etc."

Drawbacks to this method: Social interaction and verbal communication may not be as heavily stressed as other teaching methods; TEACCH is more focused on accommodating a child's autistic traits than in trying to overcome them. Also, more research is needed into the effectiveness of TEACCH, especially in comparison to Applied Behaviour Analysis and other teaching methods.

In contrast to the outcome studies of ABA published by Dr. Ivar Lovaas, TEACCH has not published comprehensive, long-term studies of its effectiveness in treating and educating children. A short-term study in 1998 found that young children who received four months of a home-based TEACCH program improved more than children who received no treatment at all.

Parents who want their child completely included in all classes with nondisabled children may not be happy with a TEACCH program. Some schools primarily use TEACCH in self-contained "autism classrooms," but it can also be used in other settings.

The TEACCH program developed in North Carolina includes an array of services such as evaluations, parent training and support groups, social and recreation groups, counselling, and supported employment. However, these services may be missing from public schools in other states that have adopted this method for their autism classroom. You may wish to learn more about the North Carolina model to see how your school's TEACCH program measures up.

Check your progress

Notes: a) Write your answer in the space given below.

b) Compare your answer with those given at the end of the unit.

5. What is called Discrete Trail Method?

6. What are the Autism teaching methods?

7. Expand TEACCH.

UNIT 15 VOCATIONAL TRAINING AND CAREER OPPORTUNITIES

Objectives

After going through this block, you will be able to:

- Train persons with autism on vocational skills.
- Provide information on career opportunities for persons with autism.

15.1 Vocational Training

Vocational programs provide individuals with ASD the opportunity to experience practical learning in a number of fields. These programs are focused more towards young adults who are transitioning into their new jobs. Vocational programs provide workplace experience by offering internships and/or mentorships. Such programs are usually tailored to specific job roles and job types.

Training in work skills among young adults and adults with autism needs to focus on their strengths. In general, individuals with autism perform best at jobs which are structured and involve a degree of repetition. They thrive in an environment that is structured and well organized. Persons with autism often excel in tasks involving numbers, book keeping, data input, accounting, and tasks involving rote memory. In a job setting, they may have a good eye for detail and meticulous application of routine tasks. Given the social deficits of autism, they are best at jobs that do not involve a lot of dealing with the public, do not rely too heavily on social skills, and jobs which are routine and predictable.

Most persons with autism will do happily and well on a repetitive type of job, such as putting a shuttle through a simple loom repetitively to weave long swatches of fabric, or silk screen printing. These are tasks that the non-autistic may balk at. They are also good at jobs where they might have to speak a lot, but can speak without interruption about their own interests. Training in vocational skills and employment for individuals with autism should thus focus on these strengths.

Some of the difficulties they face are with interpreting verbal and non-verbal communication, such as idiomatic language, facial expressions and body language, difficulties in jobs that require dynamic social interactions. Initiating and maintaining conversations on general topics may not be of particular interest to them. Similarly, jobs that require them to look beyond their narrow interests towards abstract ways may be difficult. Vocational training must teach skills to get a job, but more importantly, also directly teach the skills that are needed to keep those jobs.

Currently Action For Autism has a work skills training unit and that too is at a nascent stage. A few individuals have gone into the work arena, but finding open employment for most remains a difficult task. AFA's experience has shown that those with Asperger's Syndrome who complete mainstream education but have interpersonal difficulties, training in work place etiquette and rules is imperative. By and large vocational training for persons with autism is really non-existent.

15.2 Career Opportunities

In addition to training in vocational skills, there are autistic individuals who are in open employment or in sheltered workshops in India, and these individuals cope with their special needs and adapt to the work environment, even in the absence of required training and supports. People who have autism are currently employed as artists, librarians, stock keepers, data entry operators, other office workers, computer operators, mail and dispatch staff, assembly line workers, accounts, and in sheltered work settings. In the successful cases, the work environment has provided the necessary support and have adapted to the needs of the individuals. Much of this has been serendipitous and without an awareness of the individual's diagnosis of autism. Yet as both educational and workplace environments become increasingly competitive, individuals with autism will need certain provisions in order to access the workplace.

Barriers to successful employment may arise because Autism Spectrum Disorders (ASD) is a hidden disability and co-workers not aware of the nature of the person's disability may easily misunderstand them. In addition, most jobs require an interview process which relies on communication and social interaction skills, areas of particular difficulty for a person with ASD. With appropriate training and matching of skills to jobs people with autism can learn meaningful job skills that enable them to successfully work in competitive employment, supported employment, or in sheltered workshop programs.

Check your progress

- Notes:** a) Write your answer in the space given below.
- b) Compare your answer with those given at the end of the unit.
8. What are the barriers to successful employment of persons with autism?

LET US SUM UP

Concepts, definitions, and characteristics of autism spectrum disorder are described in Block-3. You will understand the important aspects and

tools for assessment of autism. The instructional approaches, teaching methods are discussed in this unit. And the importance of vocational training and career opportunities for persons with autism spectrum disorder is also briefed in this unit.

GLOSSARIES

ABA: Applied Behaviour Analysis.

Autism: a broad range of conditions characterized by challenges with social skills, repetitive behaviors, speech and nonverbal communication.

Developmental delay: A developmental delay refers to a child who has not gained the developmental skills expected of him or her, compared to others of the same age.

Intervention: An intervention is the act of inserting one thing between others, like a person trying to help.

Occupational therapy: a branch of health care that helps people of all ages who have physical, sensory, or cognitive problems.

Pretended play: a form of symbolic play where children use objects, actions or ideas to represent other objects, actions, or ideas using their imaginations to assign roles to inanimate objects or people

Reinforcement: the process of encouraging or establishing a belief or pattern of behaviour.

Task analysis: the process of breaking a skill down into smaller, more manageable components.

ANSWERS TO CHECK YOUR PROGRESS

1. Although people with ASD experience many challenges, they may also have much strength, including:
 - Being able to learn things in detail and remember information for long periods of time
 - Being strong visual and auditory learners
 - Excelling in math, science, music, or art
2. "Autism spectrum disorder" means a neuro-developmental condition typically appearing in the first three years of life that significantly affects a person's ability to communicate, understand

relationships and relate to others, and is frequently associated with unusual or stereotypical rituals or behaviours.

3. The following are the types of autism screening tools:

- Ages and Stages Questionnaires (ASQ)
- Communication and Symbolic Behaviour Scales (CSBS)
- Parents' Evaluation of Developmental Status (PEDS)
- Modified Checklist for Autism in Toddlers (MCHAT)
- Screening Tool for Autism in Toddlers and Young Children (STAT)

4. visual supports are useful and can be employed to:

- organize the student activity with daily schedules, mini schedules, activity checklists, calendars, choice boards.
- provide directions or instructions for students using visual display of classroom assignments, file cards with directions for specific tasks and activities, pictographs and written instructions for learning new information.

5. Discrete trial training involves teaching skills in small units called trials. Each trial consists of an instruction, a prompt, a response from the student, and a consequence or feedback. The instruction is given in simple, clear language that the student can understand. Prompts can range from intrusive to subtle. Feedback is given immediately following the student response and is specific to the response. Feedback is meant to be informative for the student. For example, if the student responds correctly with good attention, positive reinforcement is given (Great paying attention!) with or without a tangible reinforcer. If the student makes an attempt but is incorrect, specific feedback is given (Good try, but....). If there is no response, feedback is still given to let the student know that more attention is necessary (Uh-oh, you need to pay attention). Approximately 3-5 seconds are allowed following the instruction to give the student time to process the direction. A few seconds are allowed between trials in order to separate each trial.

6. The following are the autism teaching methods:

- Applied Behaviour Analysis and Verbal Behaviour
- Relationship Development Intervention

- Sensory Integration Therapy
 - TEACCH (Treatment and Education of Autistic and Related Communication-Handicapped Children)
7. TEACCH: Treatment and Education of Autistic and Related Communication-Handicapped Children
8. Autism is a hidden handicap, and the co-workers are not aware of the nature of autism.

SUGGESTED READINGS

- Ascension Sacred Heart. (2017). Introduction to applied behavior analysis. <https://www.youtube.com/watch?v=l9jFrBv4BKY>
- Avera Health. (2017). Sensory integration therapy helping children with autism - Medical Minute. <https://www.youtube.com/watch?v=W8rBHeubDNs>
- Autism Inclusion in Classroom. (2017). <https://sites.google.com/site/autismclassroominclusion/standard-4/objective-a>
- Higgins, J. (2003) Practical Ideas that Really Work for Students with Dyslexia and Other Reading Disorders, PRO-ED, Austin.
- Moyes, R.A. (2010). Building Sensory Friendly Classrooms to Support Children with Challenging Behaviors: Implementing Data Driven Strategies, Sensory World, Texas
- Pierangelo, R., & Giuliani G.A. (2003). Transition services in Special Education, Allyn & Bacon.
- Reddy G.L., & Rama, R. (2000). Education of Children with Special Needs, New Delhi - Discovery Pub.
- Simpson, R. L., & Myles, B. S. (2008). Educating Children and Youth with Autism: Strategies for Effective Practice. (2nd edition) Pro Ed. Texas.
- Smith, D.D. (2003). Introduction to Special Education Teaching in an Age of opportunity, Allyn & Bacon.
- <https://thenationaltrust.gov.in/upload/uploadfiles/files/National%20Trust%20Act%20-%20Englsih.pdf>

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About Tamil Nadu Open University



Tamil Nadu Open University was established in 2002 by an Act of Tamil Nadu Legislature, with the objective of introducing and promoting Open University and Distance Education systems in Tamil Nadu. Relaxed entry procedures, maintenance of standards, individualized study, flexibility in terms of place, duration of study, use of latest ICT, well-knit student support services network, cost effective programmes, collaboration and resource sharing with other Universities are its salient features. Presently functioning at its headquarters at Saidapet, Chennai.

School of Special Education and Rehabilitation

The School of Special Education and Rehabilitation (SOSER) was established with the approval of the Academic Council and the Syndicate of the University in 2009. This School comes under the Faculty of Education. The prime function of the School is to undertake academic, training, research, and extension activities for promoting education and rehabilitation of persons with disabilities. The Tamil Nadu Open University and the Rehabilitation Council of India has signed a MoU during 2006 to launch the B.Ed.Spl.Education Programme with the specialisations of Hearing Impairment (HI), Visual Impairment (VI) and Mental Retardation/Intellectual Disabilities (MR/ID) through Distance Mode. The School has produced around 4500 special educators since its inception.

The Tamil Nadu Open University, the first University in the State of Tamil Nadu, to offer B.Ed. Special Education through Open Distance Learning Mode since 2008 and the first State Open University offered M.Ed. in Special Education through Distance Mode during 2015 – 2016. The Special Education programme offered by SOSER are approved by the Government of Tamil Nadu, the Rehabilitation Council of India (RCI), New Delhi and the University Grants Commission (UGC), New Delhi.

The Department of Higher Education, Government of Tamil Nadu issued the G.O. MS No. 56, Dated: 24.04.2012 to consider the B.Ed. Special Education as equivalent to B.Ed. General Education for the purpose of employment in public services. This would create an impact to get more number of persons to work for persons with disabilities in Inclusive schools.

A Centre for Multimodal Material Production for Differently Abled (CMPD) is also functioning under the School of Special Education and Rehabilitation in order to cater to the educational needs of students with disabilities enrolled in various programmes of the University.

The SOSER has been conducting RCI approved CRE programmes and In-service Trainings for Govt. Officials on disability and Special Education and when demand arises.

The University aims to expand the spectrum of special education programmes such as M.Ed.Spl.Ed., Ph.D., in Special Education in the coming years.



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