Training Module on
Mental Retardation

शिक्षा का अधिकार

सर्व शिक्षा अभियान

सब पढ़ें सब बढ़ें

Sarva Shiksha Abhiyan

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Section 2

Objectives

Part A

1. To define and explain concept of Mental Retardation and appreciate historical evolution of meaning of Mental Retardation, in order to interpret its current meaning to Parents, Co-Lateral Teaching Staff, Support Staff working or assisting in home or school.
2. To describe features of Mental Retardation in Educational, Psychological and Medical context.
3. To explain causes of Mental Retardation and help Families and Community members work towards its prevention in future incidence of occurrence.
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10. To develop competency to select appropriate teaching strategies for persons with Mental Retardation in educational training and along with combination of other therapeautic inputs for students comprehensive educational gains.
11. To develop capacity to document, maintain educational progress and write reports with regard to student's progress in Inclusive Education.

12. To understand process and options of evaluating students educational performance and evolve appropriate models of evaluation for Persons with Mental Retardation in Inclusive Education.

13. To prepare an appropriate school management plan incorporating academic and non-academic components to ensure comprehensive gains in students with Mental Retardation.

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Section 3

Introduction

Introduction to Mental Retardation (MR)

Concept and Definition of MR

Mental Retardation is a life - long condition, which cannot be cured. Persons with Mental Retardation possess the ability to be trained to become independent with systematic and planned support. Mental Retardation is not Mental illness. Mental illness can be cured. Persons with Mental Illness have normal development but suffer from psychological disturbance which needs systematic treatment, sometimes even medication whereas Mental Retardation is a condition when child's mental development is not matching with his physical development. For example – if a child is 8 years by age will show behaviour younger to the age like a 3 year old would behave.

There are many superstitions about Mental Retardation, regarding what causes and these are common to other disabilities also. These beliefs are not based on facts include:

a. Mental Retardation is due to "karma" or fate. A disabled person born in a family is considered to be a curse on the family or due to black magic.

b. Mental Retardation is caused by solar eclipse.

c. Some believe that a person with Mental Retardation is an "Avtaar"

Major features of Mental Retardation are characterized by delay in overall development and so they need systematic training for learning activities of daily living and other essential adaptive skills. For this they need specific support to be trained at different levels corresponding to their degrees of Mental Retardation as it affects the overall development of the child, such as delay in acquiring language, social and self care skills. Ability to understand and comprehend are less or delayed, responses are slow and may have associated problems in hearing or vision. Some may have reported history of seizures or fits that require continuous or long-term medication. Best form of management for these children is systematic and regular monitoring of training support for becoming self – reliant towards appropriate rehabilitation.

Myths and Facts

Common misconceptions are:

- Marriage cures MR

- Medicines can make a person normal
- MR is contagious

Often Mental Illness and Mental Retardation are mistaken to be the same therefore Persons with Mental Retardation are also called 'mad' because they are perceived as persons with Mental Illness. Some common misconceptions are listed below that are often responsible for wrong labelling of Persons with Mental Retardation (Source – DRC Manual published by NIMH):

- Mental Retardation is a life-long condition and it cannot be cured, but they can be taught to become independent with training support where as Mental illness can be cured.
- Major features of Mental Retardation is delay in overall development and so they need systematic training for learning adaptive skills. Persons with Mental Illness have normal development but suffer from psychological disturbance which needs systematic treatment, sometimes even medication.

Prevalence and Status of Mental Retardation

Persons with Mental Retardation have been historically referred in Indian context, through pre-independence and post – independence era. However the shift has been significant in management and care of these persons over the recent decades. Initially they were seen as subjects of pity who are dependent on others and thus deserved charity; hence only residential care was felt necessary. After the introduction of modern education in post - independence period with scientific advances in health and developmental studies, the scenario underwent a sea change. There was an increased realization that placement in community can improve their competencies behaviourally, socially and cognitively. Hence Parents became involved with support of community resources made accessible for achieving comprehensive rehabilitation.

Introduction of legal and educational provision followed with shift in placement approach from residential to day schools and community based support for employment. Article 41 and 45 in Indian constitution (1950) embodies the clause that every child within the age of 6 to 14 years must be provided free and compulsory education including the disabled. In India the policy towards persons with disabilities has adopted an "Inclusive Approach". First special school started in 1941 in Mumbai, was started by a Parent, to provide educational training. In 1987 Integrated Education Scheme was introduced to place students with Mental Retardation in regular schools. For the first time inclusion of Mental Retardation category with other disabilities was possible in India for legally protecting their rights in India with the introduction of Persons with Disabilities Act (Equal Opportunities, Protection of Rights and Full Participation) in 1995.With upgrading of educational provision from "Directive Principle" to "Fundamental Right" in 2002, introduction of the "Right to Education Act" in 2009. Employment and training support were introduced in ITI for the disabled for employing them in mainstream society.

Actual number of persons with Mental Retardation is estimated to be 2% to 3% of any given total population as per international estimates of WHO. International estimates are followed in India as there is no systematic enumeration study available in Indian context, reason being the large geographical spread of the country. This also applies to the distribution of persons with mental retardation across degree of disability and curricular wise division. The National Sample Survey enumeration for general population made an attempt in 2002 to report data gathered during 2001 national census study, as listed below in accordance to gender and rural urban divide:

Prevalence Estimate by NSSO - (2002)

		For every 1 lakh Population			For every one thousand Population		
Total Population in India	**MR Estimates**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
120,000,000	2400000						
	2400000	4434	2561	6995	0.185	0.107	0.291 (Rural)
	2400000	1824	1128	2951	0.076	0.047	0.123 (Urban)

Source: NSSO – 58th Round Report (2002)

Data obtained from various sources indicate that the prevalence rate of Mental Retardation is about 20 per 1000 of general population, while the prevalence of developmental delays is about 30 per 1000 in the 14 year old population. In rural areas, the incidence of Mental Retardation is 3.1% and in urban, it is 0.9%. The report by NIMH, Secunderabad states that 2% of general population has persons with Mental Retardation (Panda 1999). Three quarters of them are with Mild and one fourth are with severe Mental Retardation. A door to door survey conducted in districts of Kancheepuram and Ramanathapuram in 2001 and in 1984 in Tiruchirapalli in a population of 50,000 indicates a prevalence of 1per 1000 (Jeychandran, 2001 & 1984).

Some Facts

- Children with special needs constitute nearly 15% of the school going population.
- In accordance to report (NSSO Report No.393, 1991) enrollment of children with disabilities in ordinary schools was only 0.01% both in urban and rural areas.
- Therefore, enrollment as well as retention in school is a major problem for children with disabilities.

Definition

Internationally the definition of Mental Retardation has moved away from medical model to rehabilitative model. Current trend is to describe the condition by using functional and educational terms rather than clinical terms. Definitions are listed chronologically to demonstrate the variations in describing condition of Mental Retardation.

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

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

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

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

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

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

   - Communication
   - Self-care
   - Home Living
   - Social Skills
   - Community Use
   - Self-direction
   - Health and Safety
   - Functional Academics
   - Leisure
   - Work

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

- **Intermittent:** Support of high or low intensity is provided as and when needed. Characterized as episodic or short-term during life – span transitions.
- **Limited:** Supports are provided consistently over time, but may not be extensive at any one time. Supports may require fewer staff members and lower expense than more intense levels of support.
- **Extensive:** Supports are characterized by regular involvement (daily) in at least some environment (work or home) and not limited (example: Long-term support & long-term home living support).
- **Pervasive:** High intensity supports are provided constantly, across environment, mostly and may be of life sustaining and intrusive nature. Pervasive supports typically involve a variety of staff members.

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

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

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

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

e. Definition of Intellectual Disability – (2009 American Association on Intellectual and Developmental Disabilities (AAIDD – it was earlier known as AAMR, USA):

Intellectual disability is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills. This disability originates before the age of 18.

Intellectual Functioning—also called **intelligence**—refers to general mental capacity, such as **learning, reasoning, problem solving** and so on. One criterion to **measure intellectual functioning is an IQ test**. Generally, an IQ test score of around 70 or as high as 75 indicates a limitation in intellectual functioning. Standardized tests can also determine limitations in **adaptive behavior**, which comprises three skill types:

Conceptual Skills

- Receptive and expressive Language
- Literacy – Reading and writing
- Number concepts Money and time
- Self-direction.

Social Skills

- interpersonal skills
- responsibility
- self-esteem
- gullibility (likelihood of being tricked/manipulated)
- naïveté (i.e., innocence or wariness)
- problem solving
- ability to follow rules/obey laws
- Avoid being victimized.

Practical Skills

- Activities of daily living (personal care - eating, dressing, mobility and toileting)
- Instrumental Activities of daily living (Schedules/routines) – preparing meals, taking medication, using telephone, managing money, using transportation and completing housekeeping activities
- Healthcare
- Occupational skills
- Maintain safe environment.

Causes and Prevention of Mental Retardation

Mental Retardation occurs when the brain is damaged due to injury, infection or delivery complications in the mother. Sometimes genetic factors also can be responsible. The chart below lists causes and corresponding steps for prevention across pre-natal (before delivery), peri -natal (during delivery) and post – natal (after birth of child):

Cause of Mental Retardation

	Causes	Prevention
Before Delivery	a. Conceiving the child at very young or old age.	Best period for child bearing is between 20 – 30 years of age.
	b. Poor nutrition of expectant Mother.	Maintain good maternal nutrition before and during pregnancy of expectant mother.
	Family history with Mental Retardation (genetic inheritance).	Avoid marriages within close relatives particularly when there is a history of Mental Retardation in the family.
	Repeated pregnancies and increasing birth order.	Restrict family size and follow family planning methods for spacing adequately between pregnancies.
	Medication during pregnancy.	Medicines should be consumed only by seeking qualified health professionals prescription. Let any abortion be administered under qualified Doctor's supervision, only with 6 weeks of conception.
	Exposure to radiation like X-Rays in first 3 months of pregnancy.	Exposure to X-Rays should be avoided during first 3 months of the pregnancy.
	Contracting infections like German Measles and tetanus.	Ensure immunisation is administered on expectant mother during pregnancy against German Measles and Tetanus appropriately.
	Occurrence of fits, high blood pressure during pregnancy.	Constant monitoring of high blood pressure and fits under qualified medical practitioner, in order to prevent its occurrence.
	Over exertion, Accidents and Injury during pregnancy.	
	Consumption of alcohol, drugs and tobacco.	

	Causes	Prevention
		Avoid vigorous physical exertion and prevent injuries and accidents such as careful monitoring while climbing stairs or walking on slippery floor. Avoid consumption of alcohol, drugs and tobacco.
During Delivery	Prolonged or difficult labour. Excessive bleeding or loss of placental fluids before delivery. Ceaserian section due to complications. Delayed birth cry or respiratory distress. Wrong foetal position in Mother's womb such as babies born with feet first instead of head during delivery. Delayed birth cry or respiratory distress.	"a to d" causes need to be detected early for necessary precautions by calling the qualified Medical Practitioner immediately. "e to f" Delivery must be conducted by qualified health professional. Immediately after birth the airway must be cleared. In case the baby is blue then he/she must be put on oxygen immediately.
After Delivery / Birth	Poor nutrition (40% of causes in post natal category are preventable by giving or monitoring appropriate nutrition). Contraction of infections of the brain such as meningitis and encephalitis, jaundice or food poisoning. Over - dosage or delay / lack of immunization. Head Injuries or Accidents.	"a to d" causes need to be detected early for necessary treatment by consulting a qualified Medical Practitioner immediately.

Characteristics and Classification of Mental Retardation

Characteristics

Children with Mental Retardation have skill deficits which are manifested corresponding to the severity and level of Mental Retardation. Severity refers to the degree of damage to the brain and level refers to the level of potential a Person with Mental Retardation has for learning from training support. Severity demonstrates limitations set due to brain damage and a clinical description to explain deficits in expected development. Level the prognostic potential for acquiring skills with training support. It is often noted that brain damage causes delay in development causing skill deficits in some form or degree. When training support is extended in early years and links are strengthened between home and school adequately, then training effects sustain for longer duration. Adaptability in using learnt skills through training can be best integrated when opportunities are increased to practise repeatedly with supervision and in need based natural mainstream settings.

Selecting a training support is often determined by the level of functioning and severity of Mental Retardation. The level of Mental Retardation can vary from mild, through moderate to severe and profound Mental Retardation. Level of Mental Retardation denotes need for placement for Training and intervention. Hence educational placement depends on degree of Mental Retardation, Age, Degree of Adaptability and Residual Current Level of Functioning.

i. Clinical / Medical Characteristics:

Children with Mental Retardation usually look like any other children but some may have distinct features like –

- Small or Large head
- Small stature
- Protruding Tongue
- Blunt features
- Drooling
- Cannot walk with good co- ordination.

ii. Behavioural Characteristics:

Brain damage results in skill deficit, which in turn causes challenges in acquiring age, appropriate behaviours, sometimes even manifesting maladaptive behaviours –

- Slow in response
- Unable in making decisions

- Difficulty in completing a task uninterrupted even for a short duration
- Susceptible to aggressive reaction when demands are not met immediately
- Difficulty in remembering
- Difficulty in attending to their self – care needs
- Difficulty in complying with group game rules or social norms
- Difficulty in negotiating skills

iii. **Educational Needs:** Delay in Development is a characteristic feature such as –

i. Slow Reaction

ii. Slow in understanding and learning

iii. Poor attention

iii. Lack of concentration

iv. Short tempered

v. Poor memory

vi. Lack of co-ordination poor motor development

vii. Slow in speech development

Classification, Types of Placements and Certification of Mental Retardation (Educational)

Classification systems define Mental Retardation with emphasis on significantly sub – average intellectual functioning of the individual (assessed by the standardized intelligence tests). The deficits resulting from developmental challenges must be seen in light of concurrent skill deficits which can be addressed only by comprehensively seeking support of multi-disciplinary team support. The chart on the nexrt page shows level of educational support appropriate in correspondence with Intelligence Quotient & Mental Age, Chronological Age and severity of Mental Retardation.

Early Identification, Assessment Types, Assessment Tools and Certification

Early Identification and Screening

Identification refers to process of locating and screening refers to quick and tentative assessment of a given disability condition for purpose of detecting presence or absence of disability, which requires detailed follow-up for confirmation. Detailed clinical investigations consisting of combination of tests have been compiled by for detecting pre-natal, neonatal and post-natal stage related procedures:

Educational Classification and Placement Matrix

Medical Classification	Psychological Classification	Educational Placement
Borderline Intelligence	IQ 90 – I Q 70 **(MA – 12 Yrs)**	Admission in Regular Schools help them adapt to mainstream adaptation but require "Resource Teacher" support. Can cope in regular school matching with the corresponding mental age. (with peer age group). Might show signs of poor verbal vocabulary, inspite of no speech delay
Mild Mental Retardation	IQ 70 – IQ 50 **(MA – 10 Yrs)**	Can be placed in Regular Primary School with support of qualified "Resource / Itinerant / Special Teacher & Room" Will show early signs of writing and memorizing challenges in 1st std. Will demonstrate difficulty in answering paragraph questions for selecting appropriate information for specific question asked. Will have problems in problem solving while engaged in group situations such as selecting strategies to compete in group game or competition. Can cope with regular curriculum corresponding with matching mental age.
Moderate Mental Retardation	IQ 50 – I Q 30 **(MA – 7 Yrs)**	Should be placed in regular school. Will show good social inclusion.
Severe Mental Retardation	IQ 30 – IQ 20 **(MA – 5 Yrs)**	As far as possible should be placed in regular school.Child will require some school preparedness programmnes like Home Based support before being mainstreamed

Medical Classification	Psychological Classification	Educational Placement
Profound Mental Retardation	IQ below 20 **(MA-below 3 Yrs)**	Placement in regular school under supervision to participate in small group activities, matching with corresponding mental age As far as possible should be placed in regular school, but will require with one – to – one supervision support Child will require some school preparedness programmes like - home based support before being mainstreamed Can participate in small group activities under supervision

Identification of Children with Mental Retardation:

If you notice a delay in normal development, you should suspect the child to be mentally retarded. Use the following questionnaires or checklists called screening schedules to identify mental retardation. There are three screening schedules given below. The first schedule is for children below 3 years. The second schedule is for children between 3-6 years. The third schedule is for children who are 7 years and above.

Screening Schedule 1 (below 3 years)

Stage No.	Child's progress	Normal/Development Age Range	Delayed Development: If not achieved by the
1.	Responds to name/voice	1-3 months	4th month
2.	Smiles at others	1-4 months	6th month
3.	Holds head steady	2- 6 months	6th month
4.	Sits without support	6-10 months	12th month
5.	Stands without support	9-14 months	18th month
6.	Walks well	10-20 months	20th month
7.	Talks in 2 – 3 word sentences	16-30 months	3rd year

8.	Eats/drinks by self	2-3 years	4th year
9.	Tells his name	2-3 years	4th year
10.	Has toilet control	3-4 years	4th year
11.	Avoids simple hazards	3-4 years	4th year
Other factors			
12.	Has fits	Yes No	
13.	Has physical disability	Yes No	

If the child is found to be delayed in any of the stages given from 1 – 11 and if the child has fits or physical disability, suspect mental retardation.

Screening Schedule – II* (3 to 6 years)

Observe the following:

1.	Compared with other children, did the child have any serious delay in sitting, standing, or walking?	Yes		No	✓
2.	Does the child appear to have difficulty in hearing?	Yes	✓		No
3.	Does the child have difficulty in seeing?	Yes		No	✓
4.	When you tell the child to do something, does he seem to have problems in understanding what you are saying?	Yes	✓		No
5.	Does the child sometime have weakness and/or stiffness in the limbs and/or difficulty in walking or moving his arms?	Yes	✓		No
6.	Does the child sometimes has fits, becomes rigid, or loses consciousness?	Yes		No	✓
7.	Does the child have difficulty in learning to do things like other children of his age?	Yes	✓		No
8.	Is the child not able to speak at all? (Cannot make himself understood in words/say any recognizable words)	Yes		No	✓
9.	Is the child's speech in any way different from normal? (not clear enough to be understood by people other than his immediate family)	Yes	✓		
10.	Compared to other children of the same age, does the child appear in any way backward, dull or slow?	Yes	✓		No

If any of the above items is answered 'Yes' suspect mental retardation

Adapted from the International Pilot Study of Severe Childhood Disability – Final Report – Screening for Severe Mental Retardation in Developing Countries.

Screening Schedule – III* (7 years and above)

Observe the following:

1.	Compared with other children, did the child have any serious delay in sitting, standing or walking?	Yes	No
2.	Can the child not do things for himself like eating, dressing, bathing and grooming?	Yes	No
3.	Does the child have difficulty in understanding when you say "do this or that"?	Yes	No
4.	Is the child's speech unclear?	Yes	No
5.	Does the child have difficulty in expressing, without being asked what the child has seen/heard?	Yes	No
6.	Does the child have weakness and/or stiffness in the limbs and/or difficulty in walking or moving his arms?	Yes	No
7.	Does the child sometimes have fits, become rigids or loses consciousness?	Yes	No
8.	Compared to other children of his age, does the child appear in any way backward, dull or slow?	Yes	No

If any of the above items is answered 'Yes' suspect mental retardation

Note: Screening schedule 2 and screening schedule 3 ensure the prompt identification of every single mentally retarded child. Do not worry if the questions sometimes identify persons with handicaps other than mental retardation. Such persons can be later assessed. Our chief concern is the identification of the mentally retarded child.

Assessment Checklist:

Age Range : 0-6 Months			
1.	Does the child smile at others?	Yes	No
2.	Does the child hold his head erect when placed on his abdomen?	Yes	No
3.	Does the child make sounds like 'ta-ta'ta' 'na-na-na'?	Yes	No
4.	Does the child roll from back on to stomach?	Yes	No

5. Does the child use his whole palm to grasp?	Yes	No
Age Range : 7 – 12 Months		
6. Does the child respond to name?	Yes	No
7. Does the child sit without support?	Yes	No
8. Does the child crawl on his stomach?	Yes	No
9. Does the child stand by holding on to an object?	Yes	No
10. Does the child pick up things with his thumb and his index finger?	Yes	No
Age Range : 1 – 2 Years		
11. Does the child stand without support?	Yes	No
12. Does the child say 'amma', 'atta', 'tata'?	Yes	No
13. Does the child walk without support?	Yes	No
14. Does the child drink by himself from a glass or a cup?	Yes	No
15. Does the child show body parts when asked?	Yes	No
16. Can he greet others when reminded?	Yes	No
Age Range : 2 – 3 years		
17. Does the child jump with both the feet together?	Yes	No
18. Does the child give verbal answers to simple questions?	Yes	No
19. Does the child hold a pencil properly?	Yes	No
20. Does the child indicate his toilet needs?	Yes	No
21. Can the child say his name?	Yes	No
22. Does the child speak simple sentences with 2-3 or more words?	Yes	No
23. Can the child match colours?	Yes	No
24. Does the child brush his teeth?	Yes	No
25. Can the child unbutton his clothes?	Yes	No
26. Does the child point to common objects by their use?	Yes	No
27. Can the child walk up and down the steps (stairs) on alternate feet?	Yes	No

28. Can the child eat by himself?	Yes	No
29. Does the child differentiate big from small objects?	Yes	No
Age Range : 4 – 5 years		
30. Can the child copy patterns such as round, straight or slanting lines?	Yes	No
31. Can the child button his clothes?	Yes	No
32. Does the child comb his hair without help?	Yes	No
33. Does the child wash his face without assistance?	Yes	No
34. Can the child associate the time of the day with an activity?	Yes	No
35. Can the child count upto 10 by rote?	Yes	No
36. Can the child name the colour of the objects when shown?	Yes	No
Age Range : 5 – 6 years		
37. Can the child follow two unrelated instructions?	Yes	No
38. Does the child name the days of the week in order?	Yes	No
39. Can the child read simple words?	Yes	No
40. Can the child count meaningfully upto 10?	Yes	No

Classroom Checklist for Identification of Children with Mental Retardation

Mental Retardation	**Yes**	**No**
Did the child start sitting at the age of 12-15 months?		
Did the child start walking after 2 ½ years or later?		
Did the child start talking after 2 ½ years or later? Has his hearing being checked? If so, is it within normal limits?		
Did the child have severe illness before the age of 5?		
At the age of 6, does the child have problem in undertaking the following activities: Toilet independently Eat independently Dress independently		

Does the child have problem in holding a pencil/ cut with a scissors?
Is the child unable to play with a ball or play gulli danda with his peers?
Does the child throw temper tantrums too often, while playing with his peers?
Is the child usually inattentive to what is said to him?
Does the child require too many repetitions to remember simple things?
Does the story have to be divided into smaller parts to make him understand?
Does the child have problems in naming 5 fruits, vegetables or plants?
Does the child have problems in naming the days of the week?
Does the child exhibit problems in expressing his needs in clear language like his other peers?
Is the child unable to concentrate on tasks even for short periods of time?
Are the child's oral responses usually inappropriate?

Note: If the responses to any of the above 4 indicators is positive then the child should be properly assessed by a qualified psychologist/ special educator.

Assessment

Mental Retardation affects all developmental processes, cutting across motor, language, social, self-care and cognitive functioning. This condition may also have additional or associated problems like seizures, speech delay, behaviour problems and sensory or motor impairments. There is hence need for assessing approach that involves multi disciplinary inputs, as the challenges faced by person with Mental Retardation are concurrent. Considering the complexity of the condition a comprehensive assessment method and tool is essential to plan an **individualized** program for training a person with Mental Retardation. Due to complex nature of challenges, an individualised approach for assessment is recommended. This refers to criterion and functional approach in assessment. Continuing from the functional classification approach for Mental Retardation, assessment must contain items that are instructional and relevant to functional adaptation for a given degree and level of Mental Retardation. Assessment of adaptive behaviour, which distinguishes a person with Mental Retardation from other disabilities, has become an important component.

Heber describes 'adaptive behaviour" as 'the effectiveness with which the individual copes with the nature and social demands of his environment". Prior to the development of adaptive behaviour scales and intelligence tests, **social incompetence** was used to determine whether a person was

Mentally Retarded or not (Nihira, 1969). Another component of assessment of person with Mental Retardation is to assess his deficits and strengths simultaneously. This approach requires a comparison with developmental norms to assess deficits and match them with residual adaptive ability that is crucial in selecting prioritised goals for functional / adaptive rehabilitation. This then forms the basis for Educational Program.

Specific Purpose of Assessment

Need for assessment is to identify strengths and weaknesses of an individual which give a functional profile for identifying areas of training goals in educational functioning. This can be systematically organised through:

- Initial identification and screening.
- Determination of current performance levels, educational needs evaluation of teaching programs and strategies (pre-referral intervention).
- Make decision regarding classification and program placement.
- For developing Individualized Educational Program (defining goals, objectives and evaluation procedures).

Types of Assessment

In view of need for assessing persons with Mental Retardation, there is dual need to compare them with their peer without disability in order to mainstream them and set goals to upgrade their deficit areas through systematic training. This approach requires **norms** that are standardised for average population and are comparable among given area of development among given age group population by and large. **Norm Based Assessment (NBA)** is one approach that helps compare individual's development with peer group to help identify areas of deficits in development. NBA is most suited when information is required in context of developmental context which draws averages from larger population for comparison.

On the other hand Persons with Mental Retardation have individualised deficits which are individualized in nature and cannot be compared with peer averages of performance. Therefore it requires a **criterion** that is comparable with reference to changes gained before and after the training support planned to upgrade individual deficits. This approach is called **Criterion Based Assessment (CBA)** suitable for planning individualised training plans in education. As culture plays a significant role in shaping functional competencies for a given individual, CBA is most suited to address individual criteria for assessing needs arising from disability and cultural context.

Effective assessment needs a combination of both types of assessment types stated above to address the peculiar mismatch between physical age and mental age discrepancy typically seen

among persons with Mental Retardation. Hence while administering assessment for person with Mental Retardation, one requires NBA for comparison related decision in context of identifying suitable placement in mainstream educational setting. One has to administer CBA when effects of training have to be reviewed comparing functional progress against same individual exclusively.

Stages of Assessment

Assessment of a child with Mental Retardation is a continuous and cyclic and dynamic process. It ranges from gathering data or information from **"entry level assessment"** or establishing baseline of functioning, leading to review of intervention effects during mid-term of training called **"formative assessment"** and finally to assess intervention outcomes after intervention called **"summative assessment".** This approach is essential to ensure corrective action is implemented without wasting time and effort in training and assure that training effects take upfront and positive strides in developing life skills education.

As multiple factors play an important role influencing learning styles, checkpoints are essential to monitor the training results in desired outcomes. This three tier system of assessment is characteristic feature of monitoring progress among persons with Mental Retardation, in view of their major learning challenges underlying in their limitations in sustaining attention, assimilating information, connecting information from learnt contexts to applied contexts and finally generalising learnt concepts independently. A careful and continuous monitoring in assessment helps in checking desired effects targeted in training goals because of above listed challenges in learning process.

Assessment Tools

In context of functional deficits resulting from condition of Mental Retardation require CBA tools for comparing effects of given training program with reference to functional status of adaptive skills that are exclusive for given individual. Indigenous CBA tools have been developed for wide range of age group, severity and level of Mental Retardation. Efforts have also been initiated to address assessment of educational needs across Special School, Resource Room in Regular School, Home Based and Community Based settings. In current scenario existing tools can meet assessment needs at comprehensive nature. A brief description of Indian based assessment tools using CBA approach will enable selecting a suitable tool for any age level, severity and level of MR person for planning educational program.

i. Madras Developmental Programming System:

   This is the oldest assessment tool in India for use in special education for Persons with Mental Retardation. Madras Developmental Programming System, was developed in 1967, by Prof. Jeychandran in BalaVihar – Chennai, who was responsible for adapting Minnessotta Development Programming System to Indian cultural and functional context. This tool covers

assessment needs of persons with Mental Retardation of all age groups and severity level in Mental Retardation. It contains checklist of functional statements covering 20 domains (each domain listing 18 items arranged hierarchically from early years competency to adult stages of functioning) cover functional adaptive behaviours suitable in Indian culture and conditions. This tool is applicable for all age groups ranging from Early Intervention, Special School, Home Based and Community Based settings.

This has an assessment matrix which uses color and symbol code to record level of achievement. Color Blue denotes formative stages of achievement and Color Red denotes independent levels of achievement. Striped codes refer to time covered for training, referring to term levels 1st to 3rd quarter of academic term. Demographic profile of child is stated in the above mentioned matrix, for purpose of tracking and general background of the indexed child.

This tool has a manual that provides instructional guidelines to administer the tool. This tool is widely used across the country by Special Educators and is approved by RCI for training Special Educators in working with Persons with Mental Retardation. This tool is applicable for all age groups ranging from Early Intervention, Special School, Home Based and Community Based settings.

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e. This tool has a manual that provides instructional guidelines to administer the tool. This tool is widely used across the country by Special Educators and is approved by RCI for training Special Educators in working with Persons with Mental Retardation.

NOTE: To procure a copy of the MDPS Assessment Tool, please contact: Bala Vihar, Anna Nagar, Chennai.

ii. Functional Assessment Checklist Programming:

This is an indigenously prepared assessment tool in India for use in special education for Persons with Mental Retardation. It was developed in 1989, by Asst Prof. Dr. Jayanthi Narayan who was then the HOD – Department of Special Education, with support of all Faculty in Special Education. This tool covers assessment needs of persons with Mental Retardation in Indian context in school age groups (3 + to 18 years) and caters to all severity levels in Mental Retardation.

FACP assessment checklist consists of functional statements covering domains, namely:

- Personal
- Social
- Occupational
- Academic
- Recreational

Each domain lists items arranged hierarchically from simple to complex levels for prescribed curricular levels, in accordance to their chronological and mental age classification criteria. This criterion helps classify functional adaptive behaviours suitably in Indian cultural conditions. The chart denotes classification guidelines for entry and promotion criteria for educational placement in prescribed curricular levels. Entry level for each curricular level is specified in terms of chronological age and criteria for promotion is denoted in terms of scores attainable in percentages indicated flow chart as 80% for promotion from lower to higher curricular level.

Scoring criteria for achieving tasks independently is “1” and inter-mediatory progress below “independent achievement” has assigned alphabetic codes that denote form of assistance required by student towards successfully completing of given task:

- “PP” If child requires physical prompt.
- “VP” If child needs verbal instructional support.
- “M” If student learns by imitation
- “GP” If child follows instructions with help of gestures.
- “OC” If child is at generalization level and only requires occasional reminder/ cue.

It means that alphabetic cues are assigned to show progress due to continuous intervention, so that even little progress by student is appropriately appreciated. However training is targeted to achieving independent level ultimately. And in case the level achieved is recorded as “OC” it means that task must be transferred from trained / routine situation to non-trained situations. If aggregate percentage score for a domain is 80% and more, it means child can move up to next level, or is fit for promotion, as it implies that student has progressed to generalization level.

f. Certification Guidelines:

Certificate for disability is issued by each State by their panel of experts who are panel members of a “medical council”. Certificate is issued to Person with Disability, by State Medical Council, who meet at least twice a month in a State Hospital. The team of Panellists on medical council constitute a Medical Practitioner at Civil Surgeon level, Psychologist and a Special Educator. Teachers must update information regarding this from their respective Medical Councils in their State Level.

g. Functional Assessment:

Functional Assessment is different from Academic Assessment, by virtue of it’s demand for application of skills in community they live in. Skills are trained to ensure transferring or applying them in real situations. Hence a functional assessment tool will seek items that are activity based and useful to determine individuals functioning in practical routine situations. These activities relate to daily needs and survival. Academic assessment restricts to cognitive skills which are useful for literacy skills but necessarily aim towards practical application. Assessment tools MDPS and FACP are good examples of Functional Assessment tools in Special Education that help train persons with Mental Retardation.

h. Planning and Implementing IEP for Mental Retardation - Common Educational Challenges:

Children with Mild Mental Retardation are often identified by primary school teachers only after they repeat class levels or constantly fail to cope with required academic curriculum. However after student is enrolled in elementary classes, general educators face challenges in teaching and managing them on account of their inadequate preparedness to deal with this unique group of children with history of Delayed Development and Mental Retardation. Classroom teachers must develop an understanding of this complex disability condition before they can meet their educational and behavioral needs. The longer teachers ignore dealing with problems of educating these children at-risk for educational learning, the more unreachable and unmanageable they become if left unattended. These children are often identified with problems in cognitive functioning, such as short or late arousal of attention when instructed in classroom setting with a large group. They may show reluctance to write but prefer to answer orally even after teacher strives to systematically teach given topic. One may notice that these students comprehend better in one-to-one situations, which can be an extra strain for a class teacher with large class sizes. Sometimes they may even appear to ignore what is being said by the teacher and instead engage in interacting with other classmates, inappropriately and causing disruption, often giving an impression of offending classroom discipline during instruction. Students with mild Developmental Delay or Mental Retardation often have speech delay or articulation problems. Therefore their interactions with peer group may appear to be restricted or immature in nature because they fall-out from age appropriate negotiation skills and fail to follow social cues to conform in given group situations Often these children perform at a lower age level therefore there is a mismatch between their physical and mental development. This poses a challenge for Teachers in planning suitable instructional plan and executing it within prescribed academic time lines for a given class level. Understandably, any combination of above listed characteristics is likely to exhaust teachers and disrupt classroom teaching and impede the learning process of children in the same class as well. Major concerns related to educational placement of children with Intellectual Disability/ Mild Mental Retardation or history of Delayed Development:

- Major concerns that surround these children are their rate of dropping out from the school as they move towards higher classes (from 2nd std itself), or remaining detained in same class for more than one academic year, resulting from their challenges in learning slower than their classmates, or behaving irresponsibly by losing or misplacing their personal materials frequently.
- They are described as children who are slow in falling in line with other students or often lagging behind in all educational tasks as expected for their age.

- Since students with developmental delay cannot manage or organise themselves until supervised they require constant assistance from the classroom teacher and their class peers.

Educational Implications and Placement Guidelines for Students with Mental Retardation in Inclusive Setting:

Even though 75 percent of students with Delayed Development and risk for Mental Retardation show symptoms of potential for disability condition during infancy, it is commonly not recognized until the child starts school (Barkely, 1981). Classroom teacher plays an integral role with parents and medical personnel in making an accurate diagnosis of disability condition and then monitors behaviour in the classroom once treatment is begun.

A student with Delayed Development or Mental Retardation will often demonstrate delay in adapting with basic personal - care skills demanding supervisory support. They will show signs of slow rate of progress even when regulated support is given. As these students best learn and pick up meaningful cues when provided practical experiences only, best pedagogy for them is to embed experiences of learning mode through need based practical situations as early as possible, along with other children. Ex: Let child share meal with other classmates in a carefully planned dining facility that may help child prevent disrupting others mealtime. If student spills food or mishandles tiffin box or napkin, this may cause disruption for others sharing meal with this child. Such students when placed in real group situations pick up positive behavioural cues more effectively that are age appropriate, through constant observation of others.

1. Another major cue that helps these students to learn appropriately is when tasks are performed in routine manner. This is essential for Teachers to note for planning classroom situations where instruction is planned in advance in predictable terms, sequence of subject – wise, in weekly Time-Table, setting a routine in morning before classes begin and after school finishes. However it is a word of caution to mention that time lines vary slightly, in accordance to ability of children with Mental Retardation attention limitations. This is common because students often get distracted midway when Teacher expects students to pay attention until instruction delivery concludes. Hence if a topic is taught for first 15 minutes, then if Teacher summarizes content through discussion or examples from familiar experiences of children, will help students base their new learning on a known experience or concept. Once again it would not be irrelevant to remind teachers to use “experiential approach” based on learning challenges listed above.

Checklist for Appropriate Resources in Inclusive Setting for Children with MR

- Class size not to exceed 25 to 30 children and ratio of non- disabled against disable student

must be maintained as 1: 15, so that each class can accommodate 2 CWSN's in each class

- Well accepted peer group with some orientation on receiving CWSN in class
- Class Teacher must be oriented about categories of disabilities and provision for barrier-free environment
- If School has adequate barrier-free environment provision
- If Management permits engaging or consulting Therapeutic experts for developmental needs of CWSN
- Awareness status among Parents of the non-disabled regarding disabilities
- Does School policy accept admission to CWSN
- Does School follow flexible evaluation system for inclusion of CWSN
- Does school have good facility for use of child friendly TLM's
- Is school, Parent and Child friendly
- Financial implications regarding tuition fees and other deposits for admission
- If location of school is well connected to public transport
- Does school provide good choice for co-curricular activities
- Does School have a Parent Teacher Association (PTA)
- Does the school have a Resource Teacher / a Resource Room / is school willing to start one shortly
- Does the school have an Itinerant Teacher or provision for one if Parent wishes to arrange for one.

Teachers and Parents can look for placements for Inclusive support in accordance to checklist above.

Relevance of ADL and Functional Academics in planning IEP:

Special Education for persons with Mental Retardation has come a long way since independence of our country, ranging from being rejected from entry into schools to inclusion in mainstream inclusive schools. This certainly does not deny the fact that these children have lesser challenges in educational learning and that all solutions have been resolved to encompass their participation in inclusive schools. This only refers to the fact that with broad-based school models, teachers

need to adapt pedagogy and strategies that help children to be included, without ignoring teachers combined responsibility to take along the band of non-disabled with disabled school population alike in inclusive settings. This requires shift from exclusive criteria to inclusive teaching criteria of assessment, programming and evaluation in instructional programming. The methodology of instruction is by Individualising learning needs and embedding training techniques that are mutually addressing needs of both groups of students with and without disability. It clearly implies that strategies selected to suit needs of students with intellectual disability should not be divorced from those strategies required for non-disabled students, nor should extra concessional facilities be imposed that the child with disability is highlighted to be functionally different from rest of the class. This nature of planning mutually inclusive instructional plan poses challenges to Teachers in inclusive set-up.

Considering that Students with Intellectual disability learn best in experiential situations, a teacher can take a clue to provide learning through a practical skill performance using concrete materials. This strategy will also encompass other children in class, who inherently have lingual limitation, attention deficits or poor comprehension due to disparity in social or lingual backgrounds. Therefore the curriculum has to be absolutely functional and activity oriented which demands considerable time and effort from the teachers (Manavalan, 1998). Hence the effort made to accommodate a student with intellectual disability may not restrict gains to these children alone but also extend to other student with any form of learning challenge in-spite of not being disabled.

Relevance of Activities of Daily Living (ADL):

Intellectual Disability is a condition that affects all domains and touches functioning in all developmental areas. The effect of disability emerges as a result of cognitive deficits, but concurrently influences basic learning any new skill. This means attention, sequential memory, comprehension, associated memory useful for labelling objects and functions thus delaying acquisition of language skills and finally adherence to routines or following complex instructions are all impaired or delayed for learning. With basic cognitive skills being deficit, the student suffers from challenge of co-ordinating cognitive skills for decision, problem solving or interaction related needs. Cognitive skills are essential pre-requisites for learning life skills for daily needs termed as “Activities of Daily Living (ADL)”. Pre – requisites like attention, observation, memory, consequential thinking, concentration, synthesis of learnt concepts with new concepts are basic to our daily skills. If any of above listed potential falls short in co-ordination it results in inadequate or deficit level of functioning in ADL. Therefore if ADL training must result in meaningful outcomes, it must first ensure training of pre-requisite skills such as cognitive processes as listed above relating to using attention, observation, associating names with people, functions with persons and names with objects, persons and their roles.

ADL assures sense of independence and reduces dependence on others, which is the first step to owning minimal responsibility for one's own self. ADL mastery reflects on undertaking individual ownership which is crucial for any level of social identity. What tasks are taken for granted for learning to survive by non - disabled groups is the most challenging need for persons with Intellectual Disability.

Implication of cognitive skills deficit does not conclude that the challenge of mastering ADL remains unresolved lifelong among persons with intellectual disability. It only emphasises that if provided routine and systematic training ADL skills can be mastered by persons having mild to severe level of intellectual disability. Research suggests that mastery of ADL skills is best realized if training begins in early years soon after detecting disability.

Cultural attitudes by family members in rearing are fundamental in shaping ADL competency. It is essential to establish required routines and regularity of practise in letting children practise habits that relate to their survival and daily needs at the earliest. This refers to tasks like self-care for toileting, feeding, bathing, dressing, grooming and care for personal hygiene. Many parent exercise overprotection towards the child with delayed development underestimating their potential to learn ADL skills through systematic training approach. What they fail to realize is the more such practices are delayed, more dependency is bred in the child, curbing their potential to realise their ability through practical participation. These children benefit little by modelling and imitation, but their learning foundation builds from their own experiential learning due to limitations in cognitive skills. All teachers must emphasise to allow students with intellectual disability to learn from their own participation rather being assisted by their classmates, which only breeds dependency building short falls in learning ADL skills. Best approach to encourage successful development of ADL skills is to allow personal level participation under systematic supervision in natural situations using needs based situations to practice ADL skills.

Relevance of Functional Academics:

Learning functional academic skills for children with Mental Retardation is necessary in order to become independent and successfully seek employment (Manavalan, 1998). Declaration of UNESCO towards "Education for All" in 2000 AD, includes children with disabilities, this also addresses learning needs of students with Mental Retardation. Literacy skills of individuals with Mental Retardation are not the same as children with other special needs due to the limited intellectual capacity. However, individuals with Mental Retardation can use literacy and numeracy skills to some extent which are application-oriented if they are given right kind of training.

Traditionally children with mental retardation used to receive reading and writing skills training like any other primary school children. Beginning with saying and writing alphabets and numbers by rote, following requirement in textbooks. This resulted in years and days progressing in teaching

children with mental retardation mastering skill in writing alphabets and numbers in sequence in rote pattern. This had limited learning outcome of child only learning to identify alphabets, but did not upgrade skills to meaningfully relate their phonetic identity to form spellings or relate numerical value to comprehend quantitative value of given digit to process by comparing or manipulating numerical values in solving mathematical problems.

New trends have emerged in Special Education, focussing on skills to be learnt for functional independence. The "ecology based curriculum approach" is good reference that promotes this pedagogy. This uses **activity based approach** for planning instructional programmes, and emphasis on **utility of learnt skill** which requires to be **age-appropriate**. Here instruction is in form of activity using concrete materials, from natural settings as far as possible. Instructional plans must not be restricted to classroom learning but directly transfer or generalize to various daily living situations at Home, Neighbourhood, Community from school level. This approach helps teachers to prepare students to smoothly integrate into their communities. This means teacher must go one mile beyond to select instructional goals not merely basing them on child's learning needs but also taking into consideration environmental and age related needs to integrate into communities, they belong to very smoothly. This is necessary as the education of students with mental retardation focuses on preparing them for independent living in their own environments in which they live. It is well known that these children have a challenge to retain learnt skills, unless they are put to frequent use, therefore items selected for teaching are applicable and useful in daily living. Transferring learnt skills to integrate into easily applicable situations is an important pre-requisite for selecting activities in functional academics. Hence use of functional literacy skills such as reading or writing name and address, filling bank forms, reading significant bill-boards and product names of consumer goods. This applies similarly to selecting numeracy skills such as concepts of time, money, calendar reading, measurements of various items with corresponding measurement units for mass, weight, distance, volume and quantity of items (Narayan & Myreddy, 2006).

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Section 4

Educational Aspects

Teaching Methodologies, Strategies and Adaptations for Children with Mental Retardation

Measures to formulate Individualized Educational Program are a key to meet learning challenges faced by students with Mental Retardation. This challenge is different in inclusive setting, because it does not privilege Teacher to focus on individual with disability but use techniques to include learning interests of children without disabilities as well. It may help if minimal information is shared regarding challenges at foundational level for teaching functional academics, which at times is a common concern of few other children in class from non-disability background.

Functional Reading

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

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

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

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

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

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

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

Teaching Functional Reading:

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

i. Sight Word Vocabulary (Whole Word Approach):

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

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

Several strategies have been engaged in applying this approach-

- **Imagery Level (Hargis, 1982):** This refers to the ease with which a word evokes a concrete picture, they usually include concrete nouns such as domestic items like refrigerator or TV brand used at home ex1: TV Co. named "GODREJ".

  ex 2: Brand of sweet "CADBURY"

  ex 3: Cold Drink brand "PEPSI"

  ex 4: Toothpaste "COLGATE"

  ex 5: Bath soap "LUX", "LIFEBOUY"

  ex 6: Mobile subscribers "VODAFONE", "AIRTEL", "LOOP"

- **Paired Association:** Like whole word approach, in this method picture is introduced and then gradually faded out till the student learns to transfer the meaning from the picture to the written word. This method is then applied also to teach students to learn reading of words and form of sentences.

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

- Here teacher can present the whole word in isolation and read aloud by pointing to the word beginning with 3 to 4 letter words then slowly progressing using same method to read complex words increasing in letters from 5 to 6 and onwards according to the child's pace and ability to progress in reading, in 4 to 6 trials.
- After child follows the pattern of pointing at the word and reads aloud, successfully, then introduce different set of 3 to 4 words with corresponding number of letters, along with the word that child has been earlier taught to read without making an error, as listed below:

  PEPSI NIKE GEMS LAYS

  Initially select set of words that have different set of letters to help child distinguish between learnt word and new words with different set of letters.
- As student with Mental Retardation learns to discriminate words and letters successfully after repeated exposures, then introduce words that look similar with minimal difference in cluster of words as in EX given below:

  PEPSI PIPE POINT PAINT

ii). Errorless Discrimination: We can use actual wrappers/ boxes of soap, cold drinks and biscuits. We (Teachers) can paste a small cutting of the original wrapper on the flash cards.

iii. Phonetic Approach:

Teacher selects words starting with similar letter that is common in all word as first letter. The letter selected must be familiar in terms of sound frequently exposed Ex- if child name begins with letter **"B"** in his name starting with letter **"B"** as in "**B"unny**. Teacher will restrict words that are commonly used in child's environment and begin with same letter **"B"** so that sound for letter **"B"** is clearly recognized and associated with shape of **"B".**

Ex – **"B" for BUNNY**

"B" for BOOK

BED

BULB

BUTTER

BOARD

BIRD

This helps child to learn associate sound that represents the letter shape of **"B".** Then teacher can introduce family of letters or cluster of letter combination as in Ex – as **"IN"**

Read "B" with "in" as in "Bin"

Read "P" with "in" as in "Pin"

Read "T" with "in" as in "Tin"

Read "R" with "in" as in "Rin"

This will enable child to combine sounds in association with shapes of letters they represent and use them in sequential arrangement of sounds and corresponding placement of letters.

iv. Error analysis in Generalization:

After learning a new skill, it must be remembered and recalled when necessary he should be able to generalize the skill to the situation when required. If generalization and maintenance of learnt skill has to be ensured, the learnt behaviour must occur appropriately outside the training conditions and should be retained to be repeated when needed over a period of time. The sustained ability for generalisation does not lie in analysis of success but in analysing errors. When a learnt task is performed in trained / structured conditions, he then must also be exposed to new and untrained conditions with some similarities. There is a possibility of committing an error when student performs in untrained conditions. Teacher must be sensitive to train the student to prevent error in new conditions for purpose of generalising a learnt skill. This will help identifying methods to prevent the established error pattern.

As Horner, Albin and Ralph (1987) stated that generalisation must be functional and must be precisely performed under appropriate but non-trained conditions. It must not be performed precisely under inappropriate non-trained conditions. This demands teaching not only what **is not correct** Example: if on a clock dial when instructed to show numeral "1" , then student identifies "1" after '12', then it is correct, but it should not be accepted when shown '1' before '2' as in 12, or '1' before '0' as in case of 10. This because 10 and 12 numbers have other accompanying numbers. This approach would limit or prevent errors from occurring right in the beginning during stage of acquisition itself, thus making generalization an easier process. Engelmann and Carnine (1982), state that **faultless** presentation rules out the possibility of

learner making an **error** in response. This will lead to precise generalization of the learnt response. Above all the successful generalization of the communication by the teacher should be **faultless** and **clear**. These authors suggest tips to prevent **ambiguity** in teaching and suggest that teacher should:

- Provide sufficient examples
- Be sensitive to learner readiness before communicating
- Demonstrate a range of variations within a given concept
- Reward the student for his right response

v). Generalisation of concepts come at later stage when the letter and associated picture concepts are achieved. Ex: B—bus, Black board, Box, Bench. Banana. , C—cup, cupboard, cake, can.

- One can teach the concept: Chair-Used for sitting—made from plastic, wood, metal though the material used is different the use is the same. Ex: Glass—used to fill water, juice made from plastic, metal, glass. Teaching this also helps develop perceptual constancy.

Functional Writing

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

Writing involves Four Stages:

i. Tracing

ii. Joining Dots

iii. Copying

iv. Writing by Memory (including spellings of words and sequence of words in a sentence).

Teaching Writing again has Six Stages:

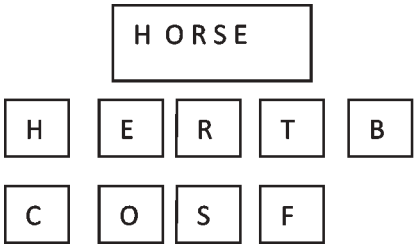
- First teacher says the word loudly and student repeats it (**auditory assimilation**). Meaning of the word is explained by discussion (**auditory information inputs for organizing information given**)
- The word **"HORSE"** configuration is drawn **(visual inputs)**

- The word **"HORSE"** is then traced **(co-ordination between visual input and kinaesthetic output)**
- The student is instructed to say each letter separately as student traces the letters individually in the word 'horse' **– "H", "O", "R", "S", "E", (This involves auditory, visual and kinaesthetic co-ordination).**
- Student then copies the model of word **"HORSE"** firstly with help of **dotted lines** and then **without dotted lines.**
- Finally student attempts to write the word **"HORSE" independently with help of memory, errorlessly.**

  Having followed above steps then student can visualize the word "HORSE" and then write it as well as say the word simultaneously.

Teaching Spelling:

- Has the student uttered the sound of each letter in the word example- "HORSE", while tracing or copying the word.
- Ask student to pick up individual letters in a word "HORSE' and match with shown word model:



  Make sure student reads and says the sound of an alphabet when he picks the letter and places in sequence to make the word.
- As the student learns to match the letters in correct sequence, then remove the model word and ask student to arrange letters in order by memory.

H O R S E

- Instruct the student to check spellings by comparing with the model of the given word.

H O R S E

Functional Writing— Should start with the student's name and not with the vowels as in Marathi and Hindi teaching.

Functional Arithmetic

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

Functional mathematics includes:

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

Pre-Computational Skills:

Development of maths skills follows a sequence:

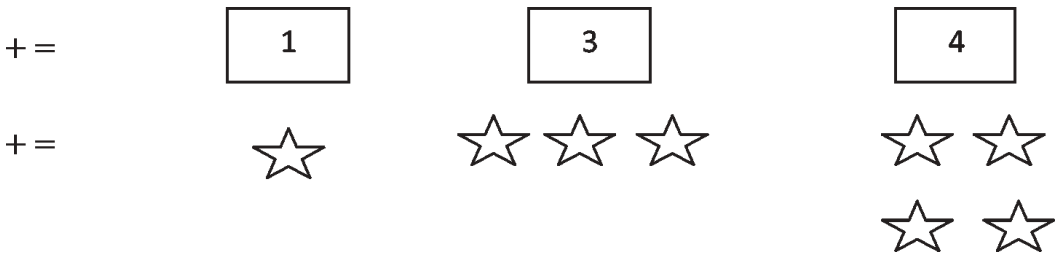
- Relative position of one in quantities – such as being aware of terms to describe quantities “more”/ “less”/ “few”/ “none” even before introducing number values.
- Teach the student to identify “1” object only. Then introduce the symbol “1” only after student successfully identifies real object in “1” quantity. Then place the object under the flash card with written symbol “1”. Finally ask the student to read the numeral “1” by showing the flash card.
- Teach the student further numbers only after learning concept of “1” successfully. Place “one more” after “1” and then by counting say “1” and “2” in orderly manner. Also encourage to identify which of the body parts are in “2” numbers on one’s own body. Same procedure will follow for teaching higher numbers in sequential order. Counting items in daily use must follow “left to right” orientation.
- Writing Numerals: This includes – Tracing, Copying and Writing from Memory.
- Cardinal and Ordinal Numbers: Numbers indicating **“quantity”** is called a “cardinal numbers” (Ex: **How many** boys have visited house.) and those values that identify **“position”** are called as “ordinal numbers” (Ex- in case you are searching a house address, often directions read left turn and third house on the left side, this denotes position of the house

ii. Computational Skills:

- **Addition-** is a basic operation upon which all other computation operations are constructed. Many specific, addition related skills are used in other operations such as “multiplication” and “division”. Students who show challenges in “addition” skills are likely to exhibit problems in all other areas of computation skills. Therefore it is important for every primary teacher to plan instructions carefully and clearly to teach operational skills for “addition”. Initial stage of

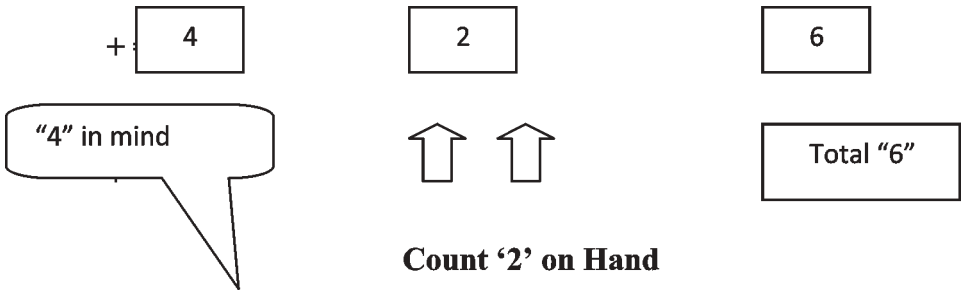
teaching addition can use concrete objects, such as counting real objects, before starting addition. Addition can be taught informally, in situations of simple counting of 2 objects by saying “1” more is added to “1” object and then together after adding 1+1= 2. However formal addition instruction activity may follow sequence listed below:

- Start with simple word problems using concrete objects
- Give three/four objects to students and ask them how many they have. Tell student “A” to give two objects to student “B”. Then ask student “B” how many objects he has now. See that the student visualizes and understands that the amount ‘increases’ when we add.
- Use flannel board and arrange kites or birds pictures to demonstrate addition operations by adding more pictures.
- Show students the symbol of addition is “ **+** “ which joins two lines together (one vertical “ l “ and other horizontal “ **–** “). This means to “put together” referring to increase in value when added.
- Introduce number flash card for specific number value and place them on flannel board. Then again place same number of object pictures flash card and ask child to read the number figure and then count the number of pictures and see if total number counted and number figure shown match the value read.
- Then push three object pictures towards one picture and ask student to count total number of pictures. Then place the number flash card that corresponds with the total number of picture cards counted- Example below illustrates the same:

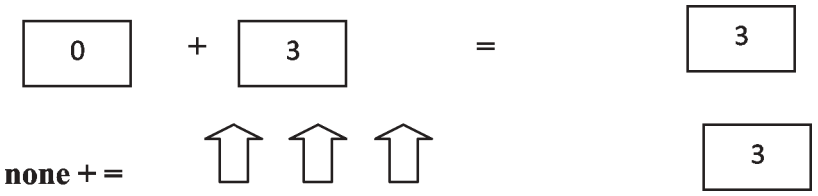


Example-

- For higher values, use the method used for non-disabled students, by asking child to keep “4” in mind “2” in hand. This means ask child to count numbers after “4” to add 2 more to 4 in mind. This will result in counting total added value upto “6”. Always ask the child to retain higher value of number in mind and lower value number to be



counted on hand.



- Introduce addition of Zero in similar method.
- Once student learns to count single digit addition and then teach the child to add double digit value without carry-over. Remember to insist on addition from "units" and not from the "tens' as children have a tendency to work from left to right as in reading language. If needed, initially colour coding can be used such as all "unit" numbers written in "green' and "tens" in number written in "red". Instruct the child to **always** start from "green" and proceed to "red" and so on. As the student acquires mastery slowly fade the colour code for denoting difference between place value for "unit" and "tens".

  Subtraction – is the opposite of addition. The sequence of procedures described in teaching simple addition can be used in teaching simple subtraction. Instruction must proceed from total use or concrete use of objects to abstract forms as described under simple addition. While introducing symbol " **–** " of **minus** describe that it refers to "takeaway" or "removal" from given value of numbers hence result will be lesser. In comparison to the addition symbol " **+** " , the symbol has one line (vertical line) lesser " **–** " than addition. This means operation is in opposite direction and refers to lesser values. Also introduce equivalent or similar meaning words for minus such as "takeaway", "remove", "left – over", "balance" and "minus".
- Introduce single digit subtraction followed by introducing "0" in bottom line.
- Introduce double digit sums without borrowing and also subtraction of "zero" in the bottom line.

- As in addition begin subtraction at the “unit” place in double digit sums, using colour code initially to differentiate between “units” and “tens” if necessary. While doing single or double digit sums (in the sum or in the answer) insist that single numbers are always written under “units”.
- Children with Mental Retardation have poor memory and retention power; it is likely that they forget operations related to addition, if not checked. Hence remember to give sums of addition and subtraction in the same worksheet. This will also help in identifying and using symbols correctly.
- The equal sign “ = “ has two horizontal lines, use word “equivalent” , which refers to ‘total’, ‘sum’ etc.

Carry Over

One of the pre-requisites to teach “carry over” is the understanding of **“units”, “tens” and “hundreds”.** Therefore while teaching single digit sums or double digit ones without carry over or borrowing, introducing terms such as “units”, “tens” and “hundreds” and making sure that students work from **‘right hand side’** is very important.

- Introduce 2 digit 2 line addition with carry over and show that “unit” number of sum total sets written under “units”. “Ten” is carried over to the top of “tens line” and written. Then allow student to add up numbers in the line of “10s” and write in given slot. Use also colour codes which can be faded away as and when student learns to differentiate “units”, “tens” and “hundreds”.
- Give sums of daily activities so that he generalizes the computation abilities. Find out the student’s area of interest and make up sums to suit his experiences of utility.

  Ex1: You have 10 bananas on the table, your aunty visited you and gave 12 more bananas, how many **total** bananas do you have now.

  Ex 2: You had 10 apples and you noticed that 5 apples were rotten. How many apples **remain** fresh for you to eat.

Ex1: 10	Ex 2: 10
+ 12	- 05
_____	_____
_____	_____

Borrowing

- As in addition make sure that the student starts at “units”. Show that “unit” takes a number from “tens” when it cannot subtract the number below. The “tens” gives away one “tens” to “unit” and reduces by one “tens” in its total. Use story form to gain effective response from student.

St 1 : In a school bus 42 children boarded and after the bus tyre got punctured, 16 children left for their houses because their parents picked them who stayed close by. How many students **are left to be dropped** by the school to reach their homes?

St 2: 42
- 16

- Make the student to reduce the numbers from “tens” and cross out the existing number in “ten” immediately on giving away to “ones”.

St 3: ~~4~~2
- 16

- Similarly the borrowed number by “units” be written beside the “unit”.

  1
St 4: ~~4~~2
- 16

- Allow student to take away the number in ones in the bottom line from the reconstituted ones and write down.

  1
St 5: ~~4~~2
- 16

  6

- Help student to regard the newly written number in “tens” on top line and minus from it, the “tens” in bottom line:

  1
St 6: ~~4~~2
- 16

 26

- Borrowing with “0” :

  Ex with “0” in bottom line-

```
  74              65
- 30            - 20
------          ------
------          ------
```

  Ex with “0” in top line

```
  60              50
- 37            - 12
------          ------
------          ------
```

  Ex with three digit subtraction

```
  432             740
- 120           - 228
------          ------
------          ------
```

  Ex with different digit combination

```
  32              432
-  8            -  67
------          ------
------          ------
```

As in addition introduce subtraction problems that the student can relate with experiences in day – to – day life.

Ex: Babu had 55 mangoes, 16 were given to his friend. How many mangoes were left with Babu?

Later introduce combination of subtraction and addition problems.

Ex: Mala had 25 sweets, she gave 3 to Shubha, 4 to Vani and 6 were stolen. How many sweets are left with Mala?

Application Skills

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

- **Money -** It helps us compare worth of objects. Instruction about money should follow sequence throughout, in relation to practical experiences. Therefore it should be planned in such a way that each student's needs in terms of utility are met.
  - Discuss and give uses of money to develop concept of value and the understanding that it is used in exchange for goods, services, entertainment etc.
  - Start with teaching rupee value as paise needs number concept beyond '10'. Try listing things that cost Re.1/- or Rs.10/- not involving change, this allows for teaching actual exchange to students.
  - Simulate a shop experience and let student exchange roles of customer and shop owner as part of daily time table.
  - Ask student to prepare a budget for cooking some items in class for picnic or birthday celebration. Initially help them buy items under supervision and then gradually give them freedom to purchase them on their own.
  - Make students read the price tags on wrappers of consumer goods used every day, like milk packets, bread wrapper, soaps, biscuits, shampoo, hair oil, crème bottle etc. These material (wrappers) can help teach computational skills.
  - Let student match the existing currency notes and coins (Re.1/-, Rs. 5/-, Rs. 10/-) with price tags. Give combination of notes and coins, to sensitize them how Rs. and coins are written in order on price tags.
  - Use actual bills to teach calculations.
  - Introduce coins 50ps, Rs. 2 and 5 coins, Re.1/- , Rs. 5/- , Rs. 10/-. Let students read the price tags below worth Rs. 10/- and pay the correct amount.
  - Calculator may be used to help students compute values they cannot deal with using memory. Experience shows that students if taught to use calculator can independently compute and use money.
  - Encourage student to open a bank account and help student become aware of misuse of account details by strangers and ensure family members are involved in the program.
  - **Money**: They can be asked to make the total of list of grocery items on calculator.
  - They can be sent to purchase a few items from the shop. They can make a total of clothes for laundry or given for ironing.

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

  - Does the student change date, week day and month in calendar every day. Spend personal time with student every day to discuss what day or date it is today, yesterday and tomorrow. Use customised calendar as shown below:

    Ex 1:

Yesterday	Sunday
Today	Monday
Tomorrow	Tuesday

    Ex 2:

    JULY 1998

SUNDAY	5	12	19	26
MONDAY	6	13	20	27
TUESDAY	7	14	21	28
WEDNESDAY	8	15	22	29
THURSDAY	9	16	23	30
FRIDAY	10	17	24	31
SATURDAY	11	18	25	-

  - Teach students to read and write names of the weekdays / months in a sequence using a calendar. Have them mark national holidays, birthdays and festivals.

  - Explain seasons in terms of months, fruits which are seasonal, vacations that are seasonal. Teaching seasons may coincide with food patterns, dressing code, appropriate experiences that help concretely understand concepts.

- Use real clock and show movements of arms and their functions, in relation to reading passage of time in terms of long hand representing hours and short hand representing minutes. Allow student to manipulate winding keys of a clock by themselves to set an alarm.
- For the younger group, associate activities with Day and Night, associate the bell in school with lunch time, school coming and going home time, associate with lunch time (1.00 pm), going home (4.00 pm), etc. Children can show all these with fingures.
- When they learn numbers, they can identify from the clock dial, Big hand and short hand or the hour and minute hand.
- For the older students the days of the week, months in the year (Gregorian and Lunar) from the calendar. They can be taught the festivals occurring in the respective months, their own birth date, age etc..
- 24 hours make a day and 30-31 days make a month, 12 months make a year.
- Full moon and new moon from the calendar and watching the sky.

Weight / Mass / Length / Distance:

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

a. Capacity / Volume:

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

- Let student observe while pouring water from jug to glass, that liquid like water has the property to assume the shape of the container it is stored in. Thus it is necessary to use standard unit to measure liquid substance quantity in "litres" for this purpose.
- Allow students to visit shops to notice how liquids are stored in containers and their volume is denoted in Lt or ml. Ex: Soft drink bottles, Oil packets, Shampoo bottles, Medicine syrup, Liquid Soap, Detergents, etc.

b. Weight and Mass:

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

- Have students compare weight of things, starting with items that have contrastingly heavy or light weight.
- Let the student grade items by weight from heavy to light. This can be done by teacher preparing sand or seed bags with varying quantities in graded weights.
- Introduce weights while teaching numerals as a generalising activity.
- Let students store items for cooking in containers and not their weight mentioned on price tags.
- Allow students to get familiar with instruments that are used in bakery, grocery shops for measuring weight of things sold in shop.
- Allow students to engage in packing activities where they actually measure eatables by weight and pack in bags with sizes that correspond with respective weight of quantity.

Length and Distance:

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

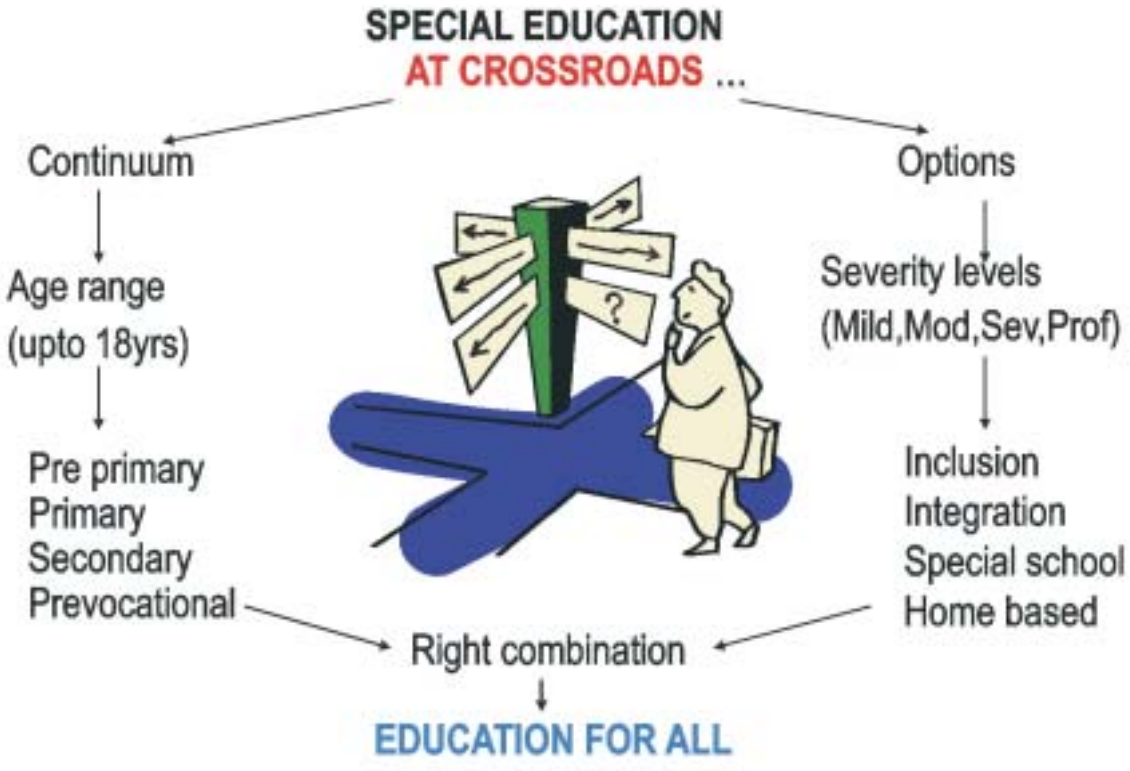
- Ask students to measure length of window, bench using a foot ruler in feet. And ask them to compare which is longer and by how many feet.

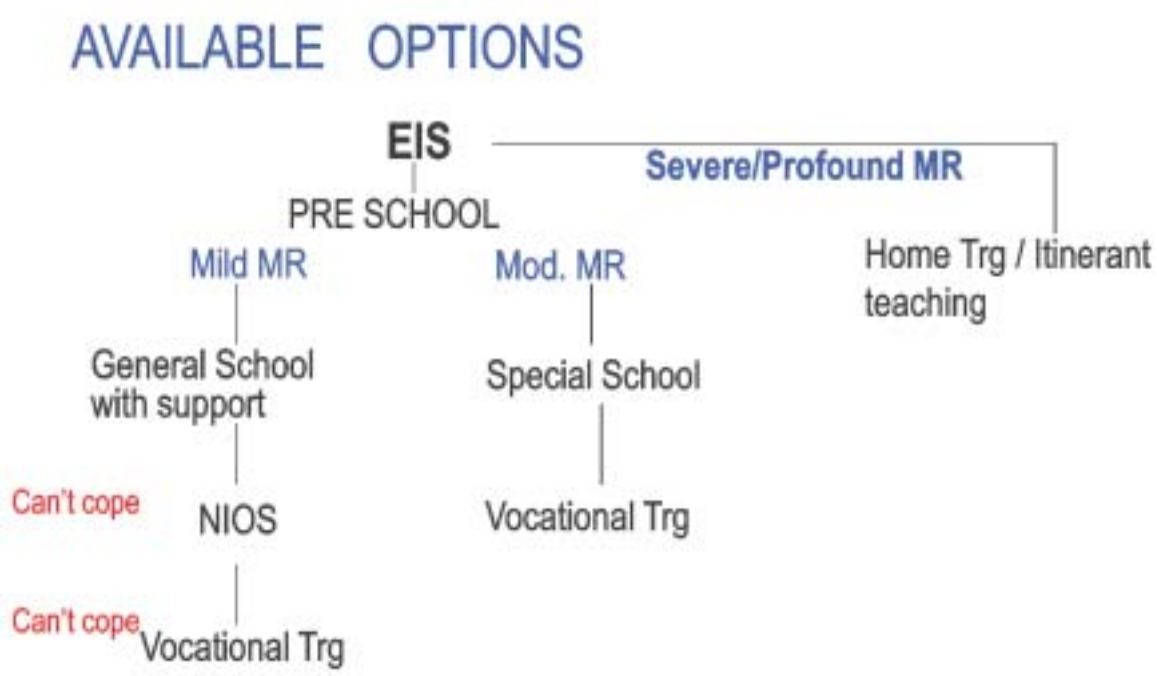
  Make students stand in a line and measure height of members using measure tape in unit of feet.
- Now allow students to measure length, width and breadth of a box (three dimensional measurements).
- For distance ask students to state time taken to travel from home to school. Then let them compare time taken to travel from home to a grocery shop near the house and compare the distance between home to school with that of shop next door. It can then be introduced that school is comparatively longer distance when compared to shop next door, which takes shorter time to reach when compared to school. This is how concept of near and far can be compared with reference to distance measured in terms of meters and kilometres.
- While playing sports let the student measure distance covered in athletic events like jumping or javelin throw events.
- Draw child's attention to road milestones while travelling places by road. Let student also notice reading of kilometres on speedometer of the vehicle while travelling with parents in car or scooter.

- Comparatively let child describe distances that are closer are walkable and distances that are far away require a vehicle and not walkable.

Appropriate Educational Options during School Years

As referred in Part A of this module, it is clear that every child with Mental Retardation during school age e.g. 3 + to 18 years has placement options in special and regular school models. However it is also a fact that more the degree of disability, more is the link with home rather than school alone. This implies that family has a major role in training child educationally. It varies in terms of physical age combination with developmental status and degree of disability, as to what is suitable for educational placement for the child.





Courtesy Dr. Jayanthi Narayan – Former Deputy Director and HOD – Special Education, NIMH.

As shown in the above figures, the decision to select placement is complex because of permutations and combinations on account of child's physical age, developmental ability and degree of disability. Therefore parents and teachers often have difficulty in making appropriate placement plan. It is highly individualistic and need based, unlike the case with non-disability group which has age as common criteria.

Range of options though available, the decisions are at crossroads throughout educational phase. For students with mild mental retardation, their entry can be on par with other children at 3 years in pre-school. They often fall back at UKG, by getting detained due to delay in comprehension of academic concepts, language and writing delay. This calls for resource teachers support to help child cope with special and adapted methods. If student has moderate mental retardation, then inclusion gains will be seen more in social domain rather that in academic area. This requires a combination of placement part time in special and regular schools. In case of child with severe or profound mental retardation, it requires placement at home dominantly and part time in special school. In short decisions must be based on combination of above listed three factors from stage to stage shift in schooling levels. Every child's educational needs will be unique and curriculum and placement options vary individually. It is important to seek expert advice before placing the student. However with the coming of Right To Education, all children would have to be placed in regular schools, some with more levels of support, whereas others with minimal support.

Early Intervention and School Readiness:

A child with delayed development below 6 years has development evolving and does not reach intellectual maturity. Therefore the term "Delayed development", rather than label them as Mentally Retarded. IQ related assessment and diagnostic terms are assigned as Mental Retardation on after 6years of age. Hence the term Intellectually Disabled is also referred in place of term Mental Retardation, which now internationally refers as Intellectually Disabled. However when a child is identified with developmental delay, irrespective of degree or form of delay an umbrella term is referred, e.g. Child with Developmental Delay. In case the delay is only suspected due to pre-natal or natal history, then if there is expected risk in early years that child may show, but not yet confirmed with developmental delay, then the condition is called "At-Risk" condition.

In all above listed conditions, Early Identification is commonly required to help child prevent secondary effects and provide Early Intervention without delay. For required help, the NIMH Publication for screening and identifying developmental delay is helpful for school readiness training. This publication provides assessment and programming guidelines that are suitable for age groups 0-3 years under home based education and for developing pre-academic skills for 3-6 years children, who fail entry into regular preschool, because of their developmental challenges.

Children if provided early intervention before age of 2 years, have the potential to build their abilities on residual potential, if not tapped can be lost life-long and child may never grow up to realize this ability. Parents and Teachers need to form close co-operation between school and home. Most of Early Intervention / programs run only 2-3 hours a day and permit family members to accompany the child. Common models are play schools, crèche, pre-schools, Montessori schools, kindergarten schools. It is strongly recommended that family members, including their Parent, siblings, other significant care takers in family, siblings may be permitted. This scope helps child feel at home, particularly when they come out of secure homes.

Curriculum during early years includes pre-academic training. Pedagogy selected is translated into short timed routines, taking not more than 2-3 hours. Home environment and neighbourhood play an important role of social agents. Time table focuses on flexible routines using play way method. Most of the instruction varies from individual to small group instructions. Major emphasis is on giving stimulation to develop sensory-motor skills. Students here are provided practical tasks, from all domains. Early indicators often reported by pre-school teachers are also listed for identifying young children with "intellectual Disability during pre-school years' as shown below. A pictorial time table, as shown below, can help students comprehend classroom routines, particularly when they lack ability to read and write at pre-school level, as their cognitive functioning is still at pre-reading, pre-writing and pre arithmetic level

INDICATORS OF LEARNING PROBLEMS IN PRE – SCHOOL LEVEL

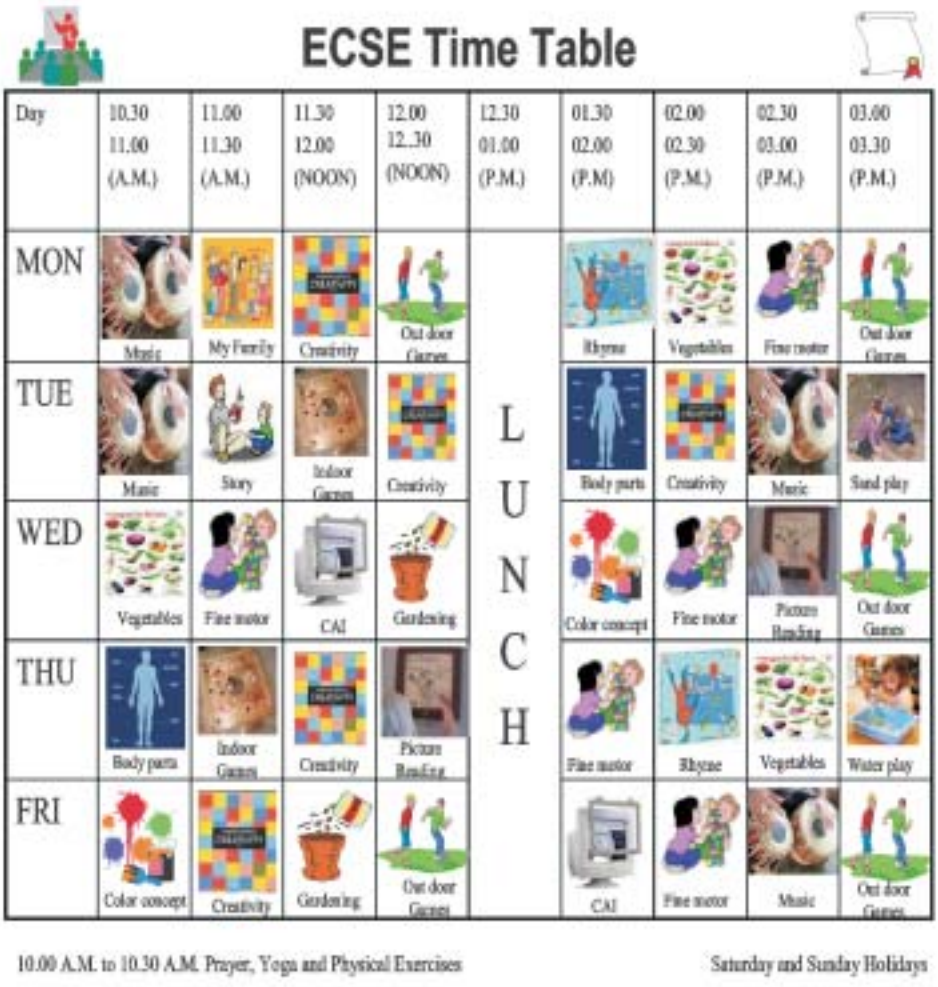
What to look for in identifying educational challenges in schools

	Language	Memory	Attention	Early Motor Skills	Other Functions
Pre-School (1 ½ to 6 yrs. Nursery, LKG and UKG)	1.Pronunciation problems 2.Slow Voc. 3.Lack of interest in listening to stories	1.Difficulties in learning numbers and alphabets, days of week, etc. 2. Poor memory for routines	1.Restlessnes while attending to any task 2. Difficulty in sitting still	1.Difficulty in learning self-help skills (tying, arranging belonging, etc.) 2. Clumsiness 3.Reluctance to copy, trace or draw	1.Difficulty in differentiating left from right 2.Confusion in visual spatial concepts

Pictorial Time Table

Time	Monday	Tuesday	Wednesday	Thursday	Friday
10- 10.30	Assembly,	Prayer	Attendance		
10.30-11.15	Gross motor games 	Fine motor	Prewriting	Yoga	Perception (visual)
11.15-12	Maths Counting	Language reading	Language oral	EVS	Social
12- 1.00pm	Art 	Craft	Personal	Recreation	EVS (fruits)
		Lunch			
	Perception/ social	EVS	Time and money	Art	Craft
	Music/ Dance	Maths concepts	EVS	Gross motor (Game)	Language (Oral, Concept)
	National Anthem	Going home			

The clock can be drawn in the time column. Pictures can be cut and pasted to show the activity on schedule. This is an example of pictorial time table. The activities, weightage (frequency of activities in a week) for areas will depend on the group and level of Education the teacher will be teaching to. The teaching has to be more experiential with visits to places which enhances the concepts to be taught, e.g., the Post office, railway station. Use of audiovisuals can help in the teaching and learning process.



Special School: This a referral recommended for students from early years to 18 years, in case developmental delay is confirmed. Children who have confirmed Mental Retardation in accordance to combination of physical age, mental age and ability to socialise can benefit in this placement.

Assessment is administered using criterion based tools, such as MDPS and FACP. These tools are briefly described in Part A of this module. As functional demands on an individual are drawn from cultural and social context, child's environment plays a very important role. This aspect of functional potential to be developed alongside with academic potential is very characteristic in children with Mental Retardation. Teachers in regular schools therefore need to collaborate with trained Resource teachers in inclusive settings to incorporate functional approach along with academic planning of instructional program for child with Mental Retardation in Special School placement. Functional training takes the front seat when compared to cognitive training, unlike regular school setup.

Pre-School Level: Curriculum aims at developing personal, social and communication skills with involvement of sensory-motor participation in play-way pedagogy.

Primary: Once the group achieves basic competence in personal, social and communication skills, in primary curriculum emphasis is laid on introducing cognitive training through concept teaching, social skill application in shared small group routines and practical activities to improve their eye-hand and motor co-ordination to enhance self reliance on day-to day basis.

Secondary: As this age group deals with pre-adolescent age, preparation for total self- reliance in personal, social and community orientation is the major concern. Functional self- reliance is now transferred in small to large group activities. Here students are taught functional academics that help their survival and applied skills in community.

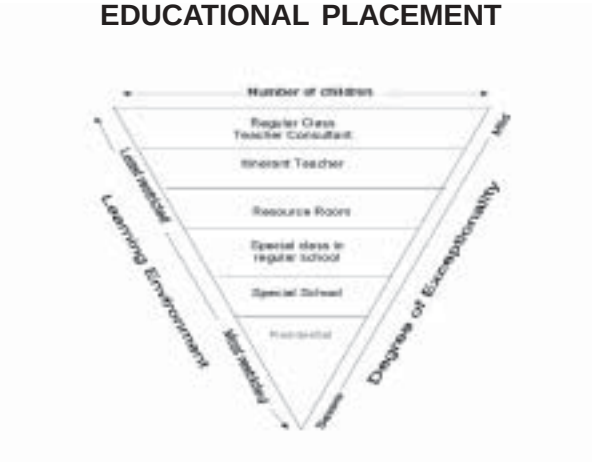
Pre-vocational: This stage focuses on training to prepare students for work life. Functional academics, personal care in grooming and sexual health, personal hygiene for health safety and social relationships ranging from home, school, community and work place is covered for their adaptation. Independence in using community facilities is incorporated as preparation for work life.

Home Based Education:

This model of educational training is applicable for very young children who are still bonded with Parents due to their dependency for personal needs, those children who have severe or profound Mental Retardation and need supervision for fulfilling their routine personal needs on account of their limitations due to severity of Mental Retardation. For such children, a case history (as shown on next page) with Home based IEP for individualized attention will help rehabilitate. Gradually after individual level support, (as shown in the IPE format), these children can then be appropriately shifted to either regular pre-schools or special schools, based on the disability level, their age and ability.

Prevalence studies have estimated that 75% of persons with Mild Intellectual Disabilities are a dominant group and can benefit in regular educational placement, what is called inclusive settings in regular schools. As shown in Deno Cascade's model of educational placement, majority of children deserve entry into regular inclusive schools. Only 25 % require specialist support of Special Education. This suggests that inclusive schools need to incorporate model of Resource Room that will suffice educational adaptation for including children with mild mental retardation.

DENO CASCADE'S MODEL FOR EDUCATIONAL PLACEMENT



CASE RECORD PROFORMA

Section – I

IDENTIFICATION DATA (CASE)

1.1 Name _____ 0.1. Date _____

1.2 DOB _____ Age _____ 0.2 Regn. No. _____

1.3 Sex _____ 0.3 Informant _____

1.4 Education _____ 0.4 Ref. by _____

1.5 Occupation _____ 0.5 Languages Spoken _____

Section – II

DEMOGRAPHIC DATA (PARENTS / GUARDIAN)

Pg. No. 50—

Case record Performa—to add—

Language of instruction_____Hand Dominance or Handedness-Right/ left

The family history can be in the tabular form.

S.No.	Name	Relationship	Age	Gender	Education	Occupation	Income

2.1 Father's Name:

2.2 Father's Education:

2.3 Father's Occupation:

2.4 Mother's Name:

2.5 Mother's Education:

2.6 Mother's Occupation:

2.7 Address:
Local:
Permanent:

Monthly Income:

SCREENING ASSESSMENTS

4.1 Motor:

4.2 Self-help:

4.3 Communication:

4.4 Academics:

4.5 Socialization:

4.6 Educational Status/ Level:

4.7 Vocational Status/ Level:

Management Plan (for all disabilities)

Signatures of Consultants:

1. 2. 3.

Date:

FOLLOW UP RECORD

Case No……..

Sl.No	Date of Visit	Next Appointment given	Remarks

INDIVIDUALIZED EDUCATIONAL PROGRAM (IEP)

PART A: General Background

Name

Age / Gender

Problems reported

Disability Diagnosed

Associated Conditions

Goals Prioritized

PARTB: Educational Programming

Date of Programming

Skill/Domain

Current level of performance

Objective

Material

Procedure

Reinforcement

Evaluation:

1———2———3————4————5———6————7————8————9————10

Key for evaluating :(1 to 4= Acquisition, 5 to 7=Maintenance, 8 to 10=Independent)

Regular School:

Often parents and teachers face confusion regarding educational placement of child with Mental Retardation in regular school or inclusive school. This is based on disparity between child's physical and mental age. Therefore combination of physical age with mental age and ability are important

factors to be considered. It is a well-known fact that students with Mental Retardation have lower mental age, therefore they would best benefit from training in functional academics, which must be supported with applied situations where students can sustain learnt concept through practical application in real life. Therefore, even though children seek entry into regular school, they require connection with their environment, where learning becomes a meaningful transference of applied skills.

After class 5, they require adaptation in teaching content, procedures and TLMs.

Hence teacher teams must consider collaborated effort in making academic topics practical oriented to enhance student's survival competence and apply life skills in real life situations. This is a major concern to work towards adapting subject text to fit into application mode of learnt skills.

A sample of Special Education Report is shown below for incorporating progress information not only in academic area, but also in functional aspects of applying academic concepts.

COMPREHENSIVE SPECIAL EDUCATION REPORT

Client's Name	:	xxxxx	Reg.No	:	xxx/2006
Age	:	6yrs 2m	Reg.Date	.	: xx.xx.xx.
Gender	:	xx			

Purpose of Referral

1. Assessment of IQ
2. Educational assessment and review in existing information

Reason for Referral

Xxxx was referred to xxxxx for a detailed assessment by Bhopal Memorial Hospital (Bhopal), for the purpose of a Comprehensive report summary. He was referred with following complaints.

- Lacks clarity in speech
- Poor comprehension
- Dependent in all Self Help skills
- Episode of fits.

Background Information

Xxxx is the eldest child, belongs to joint family. There is no family history of Mental Illness, Mental Retardation and Epilepsy. It is a non-consanguineous marriage. His father had expired 3 months back due to pneumonia. Mother is graduate and working in Central Government.

Child Information

It was full term forceps delivery, delayed birth cry, birth weight 2kg, was kept in intensive care for 15 to 20 days, was on glucose feed, had blood transfusion within 7 days of birth, low birth weight, had first episode of fits in first 2 days. Problem was identified right from childhood because of delayed milestones.

School History

Chetan Started going to school at the age of 4yrs in regular school, presently studying in class II. He has been diagnosed as having Mild Mental Retardation with delay in speech, behavioral problems and epilepsy. A comprehensive team at NIMH assessed him. The Psychological report stated that he has an IQ of 61%.

Asssessment as Follows:

Motor: Has age appropriate motor development.

Self Help skills: Independent functionally in all personal skills

Eating: Eats mixed food with spoon, spills around, can tear chapatti and eat the pieces.

Brushing: Independent functionally

Toileting: Independent functionally

Bathing: Able to pour water, requires help for applying soap.

Dressing: Dependent, wears sandals but not able to discriminate right and wrong side.

Communication:

Receptive language: Can comprehend two step instructions.

Expressive language: Speaks in simple sentences but clarity is not there.

Socialization: Has good social skills, mixes with family members, wishes others when reminded, plays with other children, prefers to sit and watch TV.

Academics

Able to identify body parts with help of verbal prompts, matches similar numbers, indicates big and small, scribbles with pencil on paper has no concept of time, money, colours, shapes, numbers.

Recommendation

- Suggest to continue regular school
- Periodic special education support for strengthening concept training.
- Parental counselling for Behaviour modification

( ) ( )

HOD – Dept/ School. Special Educator

Date:

Working with Families – Most essential parenting skills required in field of Mental Retardation is to involve families in training as partners with teaching and therapeutic teams. The reason for this is the need to support transference of learning from school to home and vice versa. However educational programs restrict to schools, because Parents compromise their responsibility in family and they have multiple responsibilities along with students disability related support for rehabilitation. For effective sharing of responsibility and ensuring sustained gains in skill development, Parental collaboration becomes inevitable. For this two processes in working with families can be basis for meaningful collaboration:

- **Enabling Parents**: Means creating opportunities for **"ALL"** family members to display and acquire competencies that strengthen family functioning.
- **Empowering Parents**: If parents are to play an effective part in their children's education, after having been excluded for so long, they must be enabled to do so. **Empowerment** means family's ability to meet needs and achieve aspirations in a way that provides a clear sense of intra-family mastering and control over important aspect of family functioning. Therefore, role of a professional should be to support and strengthen the family's ability to meet needs and achieve aspirations in a way that promotes a clear sense of **intrafamily** mastery and control over important aspects of family functioning. Therefore role of a professional should be to support and strengthen family's ability to nurture and promote the development of its members in a way that is both enabling and empowering.

Families can be helped to practise operations for improving "intra-familial" resources and strengthen their inter-personal relationships, as shown in Annexure – 8, which are not relevant only for families with disabled, but are applicable to any family, with or with challenges. Operations listed below require altering positive attitude to respect every member in the family, thus launching a positive vibe between family members.

Major operations for "enabling" and "empowering" families

- Be both positive and proactive in interactions with families.
- Offer help in response to family – identified needs.
- Permit the family to decide whether to accept or reject help.
- Offer help that is normative
- Offer help that is congruent with the family's appraisal of its needs.
- Promote acceptance of help by keeping the response costs low.
- Permit help to be reciprocated.
- Promote the family's immediate success in mobilizing resources.
- Promote the use of informal support as the principle way of meeting needs.
- Promote a sense of cooperation and joint responsibility for meeting family needs.
- Promote the family member's acquisition of effective behaviour for meeting needs.
- Promote the family member's ability to see himself or herself as an active agent responsible for behaviour change.

Source: Enabling and empowering families – Dunst, Trivette and Deal (1988) pp 97.

Behavioural Management of Children with Mental Retardation

Behaviour modification derives from the concept of operant conditioning ***(Skinner, 1953)***. The basic premise is that behaviour is learned and that it is a function of behaviour's consequences.

Operant conditioning involves both positive and negative conditioning. A reward, which is a gratifying object or a word may reinforce the desired behaviour. A reinforcer is any event that follows behaviour and results in maintaining or increasing the behaviour. Praise is one of the most effective and convenient positive reinforcers for teachers to use in managing student behaviour. But it should be given immediately after the desired behaviour occurs, otherwise the child may not perceive the connection between the reinforcer and the desired behaviour. However, it should be ensured that the child does not get used to reinforcers. Therefore, alternative rewards may have to be given.

Rewards:

A mentally retarded child understands more slowly than the others. Hence, his/her motivation on any task is low. Frequent feedback and encouragement help him/her to proceed from one step to the next. The event that happens after a behaviour, which makes the behaviour to occur, again in future is called a **reward.** A reward for the child is something that he/she likes or feels good about.

It is not always something, which you as a teacher/parent, think the child should like. A reward increases the occurrence of the behaviour it follows. The reward could be praise, pat on the back, star in the notebook or a promise for a treat. A reward increases the occurrence of the behaviour it follows. Whether we are aware of it or not, all behaviours which we tend to repeat are followed by rewards. If a particular behaviour is not followed by rewards, we would not perform that behaviour again. Rewards are an important means of changing behaviours in children.

Types of reward

Many things or events can act as rewards for children with mental retardation. Few examples are listed below:

Primary rewards:

SOLID	LIQUIDS
Banana	Tea
Toffees	Coffee
Chips	Milk
Popcorn	Limca
Groundnuts	Butter milk
Gems	Juice

Material Rewards:

Marbles	Flowers
Kite	Bindi
Toy watch	Bangles
Top	Ribbons
Ball	Anklets

Social Rewards:

Verbal	Non-verbal
Good	Smile
Well done	Nod
Excellent	Hug
Nice	Pat

Activity Rewards:

- Going out for a walk
- Playing with toys
- Drawing pictures
- Riding bicycle/ tricycle
- Seeing picture books, photo albums, etc.

Privileges

- Making a child monitor of a class
- Making a child captain of the school
- Making a child leader of a group

Since reinforcers are of many kinds, sometimes, token economy is also used. The child may be given a token with which she/he can listen to music or achieve some other desirable object. The child can also be given a star, a badge to wear or even points.

Shaping:

Shaping refers to reinforcing steps toward the target behaviour. The goal is broken down into an ordered sequence of steps or tasks, and reinforcement is given to those behaviours that come close to the desired behaviour. The desired behaviour thus is shaped by gradually increasing the requirement for reinforcement until the target behaviour is obtained.

Chaining:

The steps that are obtained through task analysis are taught separately. These steps can then be linked sequentially together till the whole behavior is learned. This process is called chaining. Chaining can be done in two ways:

- Forward chaining – proceeding from the first step to last step
- Backward chaining – when the last step is taught first and step taught sequentially till the first step is taught last.

Example, if the objective is to teach English alphabets, the student is taught to match, discriminate and then identify the word ‘dog’. From this step, the student is taught the alphabets as illustrated below.

Step 4 : D O G

Stem 3 : D O G

D O G

Step 2: D O G

D OG

Step 1: D O G

Prompting:

Just as all of us require guidance and assistance while learning new activities, children with mental retardation also require help. The procedure of providing active assistance to help children to learn a specific target behavior is called prompting.

There are three types of prompts- physical prompts, verbal prompts and clueing.

- Physical prompt: Here the child requires manual assistance like holding his or her hand and drawing. Physical prompts are usually needed when teaching a new behavior. This should be combined with verbal prompts.
- Verbal prompts: Some children may need only verbal statements describing every step of the behavior to be performed. For example, when teaching the child to sharpen a pencil the teacher may have to say "pick up sharpener and pencil ….. put end of pencil in sharpener ….." and so on.
- Clueing: Some children may need only verbal hints. For example, when showing picture of banana teacher may say "Baa ….." as a hint for the child to name it correctly.

Punishment:

For extinguishing undesirable behaviour on part of the child negative reinforcement in the shape of punishment would be necessary. Punishment, as opposed to reinforcement, refers to presenting or withdrawing something positive following the behaviour. This results in decreasing the undesirable response. Punishment need not be corporal. It could only be depriving the child of a reinforcer. One procedure that is frequently used to decrease undesirable behaviour is time out. Time out is a short period of time during which no reinforcement is available. Thus, the child is removed from a positively reinforcing situation.

Modeling:

In modelling, students learn appropriate behaviours by observing and imitating others. When they observe one of their peers being rewarded for desirable behaviour, they tend to follow the example

of the model. Thus, they learn behaviours that have positive consequences. Likewise, unacceptable behaviour might be discouraged when students watch others receive punishment for such behaviour. In addition, the teacher can call attention to behaviour that should be modelled.

In using modelling to influence a specific behaviour, the following steps are helpful:

- Select the behaviour
- Select the model
- Give the model and the observer directions concerning their roles
- Reinforce the model for exhibiting the behaviour
- Reinforce the observer for imitating the behaviour.

Children are naturally inclined to learn by imitation. Modelling involves imitation and therefore is an effective behaviour modification technique.

Conclusion

Education of children with mental retardation must necessarily be highly individualized. A child with mental retardation will also require extra time and attention. Therefore, it will be the responsibility of the parents and the teacher, not only to make educational adaptations, but also situational innovations. Parental counselling is of crucial importance. The goals that a child with mental retardation can achieve must be clearly explained to the parents in order to avoid unrealistic expectations. These goals will vary depending on the degree of retardation of the child. Some severely retarded children may need training to control violent and self-injurious behaviour. As far as possible, full participation of a mentally retarded child should be encouraged and opportunities provided for doing so. However, full participation will depend on the nature and extent of the child's impairment and behaviour. But every effort should be made to see that the child is not denied opportunities on account of his/her retardation.

Check your Progress

What are the Rights of a child with Mental Retardation that a parent should be aware of?

What are the educational needs of children with mental retardation?

How will you assess a child with mental retardation?

What is meant by the term functional assessment?

How will you sensitize a general teacher to the inclusion of children with mental retardation?

A general teacher has two children with mental retardation in her classroom. What should she keep in mind while giving reading assignments to the class?

Why are Rewards useful for children with mental retardation?

How useful are praise and encouragement as positive reinforcers?

Develop a checklist for appropriate resources for children with mental retardation in an inclusive setting?

Explain Deno's Cascade Model?

How would you teach functional reading and writing? Explain with examples?

How would you teach functional arithmetic to a child with mental retardation? Explain with examples?

How will you convince parent of a child with mental retardation about the importance of inclusive education?

How can resource rooms be used for children with mental retardation?

What suggestions will you give to a general teacher on how to include children with mental retardation in play activities and co-curricular activities?