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DIVERSITY AND INCLUSION

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July, 2017

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ISBN-

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Further information on Indira Gandhi National Open University courses may be obtained from the University's office at Maidan Garhi, New Delhi-110 068.

Printed and published on behalf of the Indira Gandhi National Open University, New Delhi by Director, School of Education, IGNOU.

Lasertypesetted at Graphic Printers, Mayur Vihar, Phase-I, Delhi-91.

Printed at :

BES 128 CREATING AN INCLUSIVE SCHOOL

Introduction to the Course

This course aims to sensitize students to the diversity of life experiences and learning needs of children. An inclusive school seeks to address the learning needs of all with specific focus on those who are vulnerable to marginalization and exclusion. This becomes even more significant in the light of the Rights of Persons with Disabilities Act 2016. The learners with special needs form one of the largest groups and since the socio-cultural, linguistic and other marginalized groups and their needs have been discussed in other courses of the programme, the thrust of this course is on children with special needs.

The need to promote inclusion is increasingly being felt all over the world to include children with special needs, at all levels of education as equal partners, to prepare them for normal development, and to enable them to face life with courage and confidence. Teachers need to be sensitized to bring and include all students in the classroom transaction. It is necessary that teachers who teach and manage the classroom are made aware of the philosophy of inclusion and oriented to various kinds of adjustments that schools should make in terms of infrastructure, curriculum, teaching methods and other school practices to relate teaching to the needs of diverse learners. For creating an inclusive school, teachers need to understand the diverse needs of all the learners.

The course comprises two blocks and eight units. The two blocks are :

Block 1 Diversity and Inclusion

Block 2 Strategies for Creating Inclusive Classrooms

Block 1 of the course deals with understanding diversity and inclusion. This block focuses on understanding diversities and inclusion in education. Children with various special needs, their nature, needs, assessment, intervention and teaching strategies have been discussed in detail in this block.

Block 2 of the course deals with strategies for Creating Inclusive Classrooms

This block focuses on various teaching-learning strategies and evaluation, adaptation of curriculum and expanded core curriculum, aids, appliances and information communication technology and resources for inclusion.

BLOCK 1 DIVERSITY AND INCLUSION

Introduction to the Block

Inclusion as a philosophy or practice cannot be discussed meaningfully unless it is situated in the context of diversity across the members of the group, especially in the framework of inclusive education. This block focuses on understanding diversities and inclusion of children with special needs. This block has four units.

In **Unit 1**, we discuss understanding diversities: linguistic, socio-cultural, economic, gender and disability, inclusion and exclusion, historical and current perspective, medical, social to rights based model, segregation, to inclusion and constitutional provisions, policies programmes and acts in detail.

Unit 2 discusses children with sensory and speech disabilities. Children with visual, hearing and speech disabilities, their nature, needs, assessment and intervention strategies are discussed in detail.

Unit 3 discusses children with neuro developmental disabilities. Children with intellectual, specific learning disabilities and autism spectrum disorder, their nature, needs, assessment and intervention strategies are discussed in detail.

Unit 4 discusses children with loco motor, multiple and other disabling conditions, their nature, needs, assessment and intervention strategies in detail.

UNIT 1 INTRODUCTION TO DIVERSITY AND INCLUSION

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Understanding Diversities: Linguistic, Socio-Cultural, Economic, Gender and Disability
- 1.4 Concept of Social Exclusion and Inclusion
- 1.5 From Exclusion to Inclusion: A Historic Perspective
- 1.6 Models of Disability
- 1.7 Diversity and Inclusion in Education
- 1.8 Constitutional Provisions, Policies, Programmes and Acts
- 1.9 Let Us Sum Up
- 1.10 Unit End Questions
- 1.11 Answers to Check Your Progress
- 1.12 References and Suggested Readings

1.1 INTRODUCTION

Inclusion as a philosophy or practice cannot be discussed meaningfully unless it is situated in the context of diversity across the members of the group, especially in the framework of inclusive education. Diversity in literary terms means differences. The term diversity, when used in discourse related to people or communities or in social contexts is more specific, indicates that a group of people is made up of individuals who are different from each other in some way or the other or it means collective differences among people, that is, those differences which mark off one group of people from another. For example, differences in culture, language, gender, appearance (e.g. skin colour, hair type) lifestyle, social and economic status, family structure, abilities, (e.g. physical, social, creative, and intellectual), values and beliefs (Jingran, 2009).

On an analysis of diversity from the perspective of uniformity, the term diversity is an antonym of uniformity. Uniformity means similarity of some sort that characterizes a group of people. 'Uni' refers to one; 'form' refers to the common ways. So, when there is something common to all the people in focus, we say there is uniformity in that group of people. When students of a school, members of army, police or the navy wear the same type of dress, we say they are in 'uniform'. Like diversity, thus, uniformity is also a collective concept. When a group of people share a similar characteristic, be it language or religion or any such, it is understood to depict uniformity with reference to the characteristic in focus. But when there are groups of people hailing from different races, religions and cultures, they represent diversity, clearly denoting that diversity means variety.

The scope of diversity widens as social groups that are identified as marginalised use a variety of strategies to make their issues acknowledged and accepted by the society. At the same time, subsumed in the notion of diversity is the understanding that certain differences may bring specific disadvantage to the person in terms of his/

her social position and life chances where as others may not, to the same extent. Finally, diversity is not simply a descriptive term; it implies an ideological position that values and respects cultural pluralism and supports its preservation within a society; the concept of diversity encompasses acceptance and respect for members of a group; it is loaded with a political perspective positively inclined to equity and justice in society.

From the above thread of analysis we understand that diversity gets linked to inclusion. Here diversity subsumes the value and respect for pluralism in a social group establishing positive inclination to inclusivity while fostering a feeling of oneness and a sense of belongingness in each of the members of the pluralistic society. It is diversity that brings in the advocacy for equity and justice for each of the diverse persons in a group irrespective of their abilities, disabilities, social status, religion, class, caste and so on and so forth.

Another thread of analysis is that it is diversity and exclusion of some who are not like the majority in their group that has given rise to inclusion as a significant discourse in today's academia.

1.2. OBJECTIVES

After going through this unit, the students will be able to:

1. Identify diversity in a social group as that which brings in the advocacy for equity and justice for each of the diverse persons in a group irrespective of their abilities, disabilities, social status, religion, class, caste and so on.
2. Identify disability as one of the important dimensions of diversity in a learner group
3. Discuss the phenomenon of social exclusion and inclusion
4. Draw a historical sketch of the societal response to people with disabilities: from extermination to inclusion
5. Discuss the various models of disability: Charity model to affirmation model
6. Understand the philosophy and practice of inclusive education of children with disabilities
7. Develop an overview of National and International policies and legislation for the education and general welfare of persons with disabilities

1.3 UNDERSTANDING DIVERSITIES: LINGUISTIC, SOCIO-CULTURAL, ECONOMIC, GENDER AND DISABILITY

Let us see some of the different dimensions of diversity seen in our social groups around.

Linguistic Diversity

Like many other countries in the world, India is pluri-lingual. The language canvas in India is like a mosaic with an overwhelming variety of patterns of speech woven together in an organic whole. It is usually difficult to attach language labels to the varied speech patterns across locales. There is seldom any consensus on the dilemma about delineating between languages and dialects with a reasoned-out argument for taking a stance. A countable proportion of the population is multilingual. There are

many languages that are used in social communication, which are often hybrids of other languages; there are constant shifts from one language to another language; there are several layered patterns of use of language among many communities, for example, use of the home or regional language by parents with their children, while their ancestral language is used with their elders.

Socio-Cultural Diversity

Cultural diversity to a sociologist refers to the variety of human societies or cultures in the world; to the variety of the makeup or the varied cultures of a group or organization or region. It is also called multiculturalism. It includes the various social structures, belief systems, rituals, ways of living and strategies the cultures adhere to, for adapting to life situations in various parts of the world. The phrase “cultural diversity” is also sometimes used to mean the variety of human societies or cultures in a specific region, or in the world. Over thousands of years, geographical, historical and religious influences have woven the colorful fabric of Indian culture, one of the oldest known to humanity. The complex demographic profile left in our society by the distinctly different looking Aryans, Asians and Dravidians has been the fore runner of our socio-cultural diversity in many ways., religion, in many forms, is the basis of our cultural context. This is enmeshed with every aspect of life and culture in India and is a prime factor that contributes to our diversity. In fact, every region within a state of India has its own identity owing to the rich cultural heritage quite different from the neighboring region and of course the other states of the country. The types of festivals, the ways of celebration of these, even if some are same across states and the religious rituals contribute to the unique identity of each of the regions. It is this richness and uniqueness of the cultural heritage of the different regions of each state that contribute to our cultural diversity.

Economic Diversity

The varied levels of social classes and the gap between these have been increasingly contributing to diversity in our society. From the time, the caste system got rooted in our society and education got monopolized by the upper caste people who knew Sanskrit, the seeds of class differences also got sown in our soil. Thus, the money power related to caste and class gave rise to economic differences and added yet another dimension to our diversity.

Gender Diversity

Gender is a social construct where as sex of a person is a biological status. Gender diversity refers to the difference in the societal outlook to people around vis a vis their sex. Right from ancient times, a female has been considered as the weaker of the two. A female, as a child, is to be protected by her Father, as a wife, by her husband and as an old mother, by her son. Her role is to bear children and look after everyone in the family. A male is looked upon as the bread winner, protector and savior of the family. From this social discriminatory position of males and females, the life experiences of a girl and boy have been very different simply because of their sex. This difference immensely contributes to diversity in our society to varying degrees across regions.

Ability, Disability and Diversity

Diversity in any social group has yet another dimension of disabilities and capabilities. Disability is a diversity classification that transcends all other indices like class, caste, race, religion and language. It represents the only minority group that anyone can become a member, anytime in life (Slorach, 2011). “The principle of diversity

provides the foundation to accept disability as part of human variation. However, it is a sad reality that in practice our treatment of difference has been rather poor, especially in the context of disability” (Ability Junction, 2011). Disability is a widely misused and misunderstood concept, as illustrated by the World Health Organization (WHO) definition: Disability is an umbrella term, covering impairment, activity limitations, and participation restrictions. Impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus, disability is a complex phenomenon, reflecting an interaction between features of a person’s body and features of the society in which he or she lives.

These definitions reflect the progress made since persons with disabilities were referred to officially as spastics, imbeciles and cripples. However, they also obscure the vital distinction established by the disability movement between individual impairment and disability as social discrimination.

It is a universal understanding that members of any social group will have varying capabilities and abilities. We also know that all of us who have no disabilities at a point in time are temporarily able bodied. Anyone can end up with disability anytime, especially physical disabilities. Many of the persons with disability have been so from birth and others have acquired it through their years owing to numerous factors. Disability is an inescapable element of human experience. It is so, first, in the sense that, world-wide, an enormous number of people have disability/disabilities. The proportion of people who have disability/ies in different national populations varies significantly with respect to the country’s status of economic development, health care, general awareness and other factors. Furthermore, because of the way this group of people is constituted, it is arguably more heterogeneous than those of race, gender, class, and sexual orientation. Disabilities may affect one’s senses or one’s mobility; they may be static or progressive, congenital or acquired, body form related (affecting the shape of the body) or functional, visible or invisible. These differences converge to the point that any population of disabled people is far from a monolithic; it stands out distinctly with differences that affect the identity of each of its members. For example, people with congenital impairments are more likely to identify themselves as disabled and reflect pride and self-respect in their social behaviour as compared to those with acquired impairment. Indeed, most people born deaf and well versed with sign language do not consider themselves disabled at all, rather they consider as akin to an ethnic minority, set off the mainstream by their language and culture. Those with acquired impairment are more likely to resist being identified as disabled and spend most part of their life time fighting for an identity of a ‘able person’ with medical and rehabilitative support. In any case, the border between the disabled and the abled is less permanent and more permeable than those between races and religions and classes. On the one hand, with the help of bio medicines and rehabilitation, individuals may pass from the status of being disabled to that of non-disabled; on the other hand, anyone can become disabled at any time and barring sudden or accidental deaths, most people will eventually become disabled to a significant degree as one grows old. In fact, we are all temporarily able bodied in a way. So, as a form of social diversity, disability is distinct in its variability, contingency and extent.

From all these facts, the most thought-provoking aspect is that each of these persons identified with disability/ disabilities may also have certain talents, skills or capabilities which are overlooked or overshadowed due to the strong disability identity. Disability is fundamental in that it may outrank other minority statuses. For example, for people with a disability and other attributes that make them distinct from the mainstream,

their disability becomes their master label, their primary identifying characteristic over-looking the others. So, it is justified that disability is a more fundamental form of diversity than differences in race, religion, ethnicity and other such factors.

Activity I

Make a checklist of the students in your class mentioning the diversity across them in terms of all the dimensions discussed above.

1.4 CONCEPT OF SOCIAL EXCLUSION AND INCLUSION

Social exclusion or social marginalization is a term used across disciplines including education, sociology, psychology, politics and economics. Because of social exclusion, the affected individuals or communities are prevented from participating fully in the economic, social, and political life of the society in which they live. Alienation or disenfranchisement resulting from social exclusion applies to people with a disability, people from minority groups, Lesbian, Gay, Bisexual, Transgender people, drug users, HIV positive patients, sex workers, orphans and the elderly. Anyone who appears to deviate in any way from perceived norms of a population may thereby become subject to varying degrees or forms of social exclusion

In “Excluded & Invisible”, UNICEF Report, 2006, the definition of social exclusion is accepted as multi-dimensional including deprivations of economic, social, gender, cultural and political rights making exclusion as a broader concept than material poverty. All the same, poverty and social exclusion are inextricably linked and one of the major causes of poverty is unemployment.

Social exclusion, on another analysis is the process of relegation of individuals or social groups to the fringe of society; they are systematically blocked from (or denied full access to) various rights, opportunities and resources that are normally available to members of mainstream groups, and which are fundamental to social integration within these groups (e.g., housing, employment, healthcare, civic engagement, democratic participation).

People with disabilities are among the most vulnerable groups who are at the risk of social exclusion. On an analysis of the general condition of the disabled population that consists almost 10% of the world’s population, one realizes that this population is excluded from essential services for living such as food, clothing, basic education, health care, employment opportunities and such other essentials which ultimately affect their participation in the activities of the people around eventually leading to their exclusion from the society. One also observes that this population is looked upon as invalid; they are at risk of violence, abuse and exploitation and miss out the chance for protection of their rights. Such population gradually becomes invisible as if denied of their very existence.

The societal systems fail to provide facilities for early detection, identification and intervention to infants and young children with disabilities and provide support to their parents and caretakers; this results in secondary disabling conditions which further limit their capacity to benefit from educational opportunities. Denial of education to children and youth with disabilities results in their alienation from access to vocational training, employment and income generation. This in turn affects their economic and social independence leading them to poverty perpetuated generation after generation (Barnes, 2012).

Social Inclusion

At the core of most definitions of social inclusion lies the concept of full participation in all aspects of life, while exclusion refers to the conditions that hamper inclusion. Participation is most significant as it denotes an active involvement in the process, not merely having access to society's activities, but engaging in them, and building and maintaining a social network. Participation also creates a sense of responsibility towards others, a community or an institution, and influences decisions or enables individuals to have access to the decision-making processes.

Social inclusion refers to a process by which efforts are made to ensure equal opportunities for all, regardless of their background, be it money, class, ethnicity, gender, race or whatever the index of diversity be, to enable full and active participation in all aspects of life, including civic, social, economic, and political activities, as well as participation in decision-making processes. Social inclusion can be approached as a goal, an objective, and a process. Its process affects almost all societal activities, and should therefore be approached from various dimensions.

If a society is inclusive it means that it understands, accepts and respects diversity, it not only recognizes diversity but also embodies it so that each member of the diverse society can achieve their full potential in life. Such societal conditions instill in each member, a sense of belonging to the community and society at large. Exclusion conversely is a process and a state resulting in lack of access to full participation in the mainstream of society.

Activity II

Discuss with your friends in the institution you study, the reasons of social exclusion as experienced by them.

Disability and Exclusion

People with disabilities are among the most marginalized groups in the world. Rates of disability are increasing, due to population ageing and the global increase in chronic health conditions.

People with disabilities have poorer health outcomes, lower education achievements, less economic participation and higher rates of poverty than people without disabilities

Excerpts from WHO Report, September 2013

In rich countries, the expanse of the free market, the proliferation of services like, human, welfare, social and educational and professionals and the increasing need to be 'intellectually fit' for work, makes disabled people economically vulnerable and socially excluded.

Let us now see the stages of development of societal response to persons with disabilities, i.e., how they are moving from social exclusion to inclusion.

1.5 FROM EXCLUSION TO INCLUSION: A HISTORIC PERSPECTIVE

History sketches a clear progress of attitude and policy-change from exclusion to inclusion of people with disabilities, through three phases: the era of exclusion, extermination, neglect and denial; the era of segregation; the special school; and the era of integration moving to inclusion.

Stages of Exclusion

Much worse than exclusion, annihilation was the fate of people with disabilities world over.

Perspective on Exclusion of People with Disabilities from a Eugenicist Lens

Eugenics is the study of or belief in the possibility of improving the qualities of the human species or a human population, especially by discouraging reproduction by persons having genetic defects or presumed to have inheritable undesirable traits (negative eugenics) or encouraging reproduction by persons presumed to have inheritable desirable traits (positive eugenics). (Based on Random House Dictionary, 2009)

Till as late as late 19th century, Eugenicists believed that, just as weaker or “inferior” members of a species were not meant to survive in nature, they were not meant to survive in a competitive human society; they propagated the myth that there was an inevitable genetic link between physical and mental impairment and crime and unemployment. In the notorious decision of 1927, the US Supreme Court upheld the legality of the forced sterilization of disabled people. Compulsory sterilization for people with disabilities became German law in 1933. More than 400,000 people with disabilities were forcibly sterilized (Slorach, 2011).

Extermination

The intellectually impaired people were referred to by the adjectives, ‘feeble-minded’, ‘invalid’, ‘imbecile’ till as late 18th century. The process of extermination of the disabled from the mainstream of the general population through killing, mutilating, burning, exiling, abandoning or making them vanish from the scene somehow or the other, were practices in vogue throughout the globe in almost all the ancient civilizations of the world.

Era of Acceptance as Subjects of Amusement

What followed was the era of acceptance of disabled people as subjects of amusement. Disabled children who survived the violence due to reasons like undetected conditions, post natal deformities or due to humanistic concerns of a few, began to be accepted as, not human beings, but as subjects of amusement and entertainment and means of serving one or the other ulterior motives of the people in authority.

Era of Legal Discrimination and Prohibition

The rise of Church as a religious institution in the medieval period led to a new period in the history of disabled people. Disability was given a label of legal uncleanness thus disqualifying disabled people from active participation in social activities.

Era of Sympathy and Asylum- Institutionalization

The second phase of Christian era saw the beginning of attempts to stop the abuse of disabled people. Children with disabilities were regarded as those poor souls who are denied opportunities to lead a normal life because of the annoyance of the Almighty for committing sins; they were thus subjects of sympathy rather than of suspicion or amusement. Influenced by the wave of sympathy and charity, efforts to protect disabled people and establishment of institutions for their welfare and rehabilitation were seen in Europe. Along with these developments, a wide number of institutions, including the mental hospitals called as, lunatic hospitals, and centres

for providing asylums to people with other categories of disabilities were seen mushrooming throughout the globe.

Era of Isolation and Special Schools

The renaissance movement that set off in the 16th century and spread throughout the West in the 17th century was a turning point in the world of disabled people. Contrary to the inhuman approach adopted in the past, there was a faith established in the capacities and capabilities of disabled people. The spirit of renaissance sparked off efforts in the direction of special education for the disabled population. (Mangal, 2012)

As a major contribution of renaissance and enlightenment movement disabled persons started getting recognized with potential to learn and achieve. Consequently, major efforts were evident to establish special schools for children with disabilities segregated from the mainstream settings. It is pertinent to mention here that only deaf, blind and mentally impaired caught the attention of the society till much later after this period.

Era of Segregated Settings- Special classes in regular schools

With the dawn of 20th century, education arena for disabled children witnessed a turning point: moving from the isolated setting of special schools to the segregated settings of special classes within the regular schools. It was the result of a new wave of humanism, coupled with the burning cries for equity of educational opportunities for all children irrespective of their disabilities in the state-run schools. By the second half of 20th century the momentum for integration although the philosophy and modalities of which were not clearly spelt out, grew in all strength and vigor in the developed countries, with very little critical analysis of it.

The early phase of this historical milestone saw the establishment of special classes in mainstream schools perceived as 'integration', while recommending that special schools become resource centres for other schools in their neighborhood areas. Slowly the percentage of children in special schools diminished and by the mid-century a considerable shrinking of state support to special schools led to the closure of many special schools. This was the scenario in the western countries especially the US. Some critics felt that the change of policy in favour of integration was catalysed more by financial than by educational considerations, while others saw it simply as a fashion, with many unquestioned assumptions. In fact, this policy change gave rise to anxiety among teachers in the remaining special schools regarding their role, their existence, and the future of their league which had been central to government policy a decade before.

Era of Integration

The era of inclusion, i.e., educating all students with or without disability in the regular schools represents the modern era and the latest global philosophy in the history of education of children with disabilities. It was after the mid-20th century that this new wave of change that spread across the developed countries, brought in the landmark change in the policy of education of children with disabilities. Upholding the right of each child and providing equity and equality of educational opportunities to all children was the philosophy that led to this new wave of change. (Mangal, 2012)

This phase started off with integration, making a limited number of additional arrangements for individual children with disabilities in schools which changed very little overall. It was almost like letting these special needs children be there rather than being convinced about the philosophy of inclusion and adapting to their needs.

This stage slowly evolved into that of inclusion wherein school systems started attempting to bring in radical changes to embrace all children.

Integration and Inclusion

Integration involves preparing pupils for placement in regular schools. It implies readiness from the part of the society or school for a change from special to regular schools. Students are expected to adapt to the school ethos and the other facilities with no assumption that the school will change to accommodate a greater diversity of students than before the scenario of integration. Integration is all about making the regular schools, suitable for children with disabilities by transplanting the best special school practices, teachers or equipment into regular settings even without analyzing the needs of the children with special needs including disabilities to ensure if these are necessary or not.

Inclusion implies a radical reform of the school in terms of conviction and philosophy followed with curriculum, assessment, pedagogy, grouping of pupils and the school environment and ethos. It is based on a value system that welcomes, respects and celebrates diversity arising from gender, nationality, race, language of origin, social background, religion, class and caste, level of educational achievement, disability etc.

Inclusion cannot be truncated from exclusion. Inclusion can be defined in terms of two linked processes. 'It is the process of increasing participation of learners in and reducing their exclusion from the curricula, cultures and communities of neighborhood mainstream centres of learning' (Booth, 1999).

The History of Inclusion of Persons with Disabilities in The Indian Context

Ancient

In the Vedic era, we have the example of Ashtavakra, a chronic and severe case of orthopedic impairment, of becoming a scholar by the educational facilities available to all irrespective of their abilities or disabilities. The great Rishis as Gurus were known to be firm believers in the theory of Karma and hence believed persons with disabilities be given ample opportunities to learn the art of self-actualization and doing good in life so that they would get better life in the next birth.

Consequently, the treatment, care and education of the disabled children also passed through the phases of exclusion, extermination, ridicule and amusement sympathy and asylum. In the later periods of ancient history, practice of treating persons with disabilities as mark of evil spirit, bad karmas of the previous birth and bad omen for the family was quite prevalent. Witchcraft was also quite common in rural parts. This was followed with establishing hospitals and asylums for the disabled and destitute.

Pre-Independence

The tradition of state funding and the charitable flow for the care and protection of the persons with disabilities continued through the medieval India. The Mughals and the Maratha rulers were also known for their charitable activities to the persons with disabilities and poor. Sympathy, protection and caring attitude for the disabled people were predominant. Special school for the deaf in 1883, for the blind in 1887, for children with mental retardation (currently called intellectual disability) in 1941 were all landmark developments. The pattern of special school education as seen today owes its origin to the work done by the Christian missionaries and charitable organizations of the country.

Post-Independence

India attempted to focus on the education of disabled children in the post-independence era. Special provision was laid down in Article 45 of the constitution, stating, free and compulsory universal primary education for all children up to 14 years of age, budgetary provision for PwD was allocated in the various Five-Year Plan and as a landmark in this direction, education of children with disability in integrated settings was emphasized in the Kothari Commission (1964-66). Integrated Education of the Disabled Children (IEDC) scheme was launched in 1974 which got merged in 1997 with the District Primary Education Project of 1985 that emphasized that universalization of elementary education was possible only if disabled children were covered under the umbrella of educational initiatives. Special schools for disabled children and integrated settings for them were working side by side. By 1980s the number of schools for children who were deaf, blind and mentally retarded crossed 150.

Integration of Children with Disabilities (CwD) in regular schools gathered momentum after the National Policy on Education (NPE) 1986 followed with the Programme of Action 1992.

The turning point in the history of education for CwD was when inclusive education was added as a key component in District Primary Education Programme in 1997. Since then there have been efforts in the direction of inclusive education, with national legislation, establishment of Trusts and other statutory bodies and by India being signatory to important World initiatives for education of CwD in inclusive settings.

After the RTE implementation, the role of Sarva Siksha Abhiyan (SSA) and Rashtriya Madhyamic Shiksha Abhiyan (RMSA) has been significant in the field of inclusive education of CwD.

Check Your Progress I

1. How is disability as a dimension of diversity different from the others?
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2. Analyze the social phenomenon of exclusion and inclusion.
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3. Discuss the process of social exclusion with respect to persons with disability.
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1.6 MODELS OF DISABILITY

Corresponding to the evolution of the philosophy of inclusion can be drawn the evolution of models of disability. A radical rethinking on policy and practice can be seen to have resulted in the contemporary philosophy of inclusion and that it reflects a fundamentally different way of thinking about the roots of difficulties encountered by a person with disability: a shift from a defect within- the-child model based on the assumption that the origins of learning difficulties is largely within the child, to a thinking that it is the societal system that are discriminatory and disabling, demanding attention to the alleviation of obstacles to the participation of disabled people in all the events and developments of the society. Let us examine these models of disability.

Charity Model

Driven largely by emotive appeals of charity, this model sees Persons with Disabilities (PwDs) as helpless people needing ‘care’ and ‘protection’. This model relies largely on the goodwill of benevolent humanitarians for ‘custodial care’ of the PwDs rather than justice and equality.

Medical Model

The medical model of disability views disability as a ‘problem’ that belongs to the disabled individual and is based on the view that disability is caused by disease or trauma and its resolution or solution is intervention provided and controlled by professionals.

Rehabilitation Model

The traditional rehabilitation model is based on the medical model and the belief that disability is a challenge which can be overcome with adequate effort on the part of the person. PwDs are often perceived as having failed if they do not overcome the disability. Like the medical model, the rehabilitation model perceives care and support as determined by professionals.

The Social Model

The social model of disability views disability as socially constructed and a consequence of society’s lack of awareness and concern about persons who require specific modifications in their environment to live full, productive lives. The model, referred to by some as the barriers model, views the medical diagnosis, illness or injury as having no part in disability. The social model of disability, in the example presented above, in the context of the student using wheel chair in a building with no ramps, would see the steps or the environmental factors as the barrier disabling the student.

“In the broadest sense, the social model of disability is about nothing more complicated than a clear focus on the economic, environmental and cultural barriers encountered by people who are viewed by others as having some form of impairment – whether physical, sensory or intellectual.” (Oliver, 2004)

Nothing about us without us! By seeing impairment as an ordinary part of life, and disability as the result of discrimination and exclusion, the social model has underpinned efforts to extract disability from the medicalised, ‘special needs’ ghetto and push for the mainstreaming of disability concerns in all development policies and practices. The social model has also provided a powerful framework for bringing disabled people together in a common struggle for equality and rights. By doing this the social model has promoted the idea that disabled people should be actors in

their own lives, rather than passive recipients of care. This equates almost exactly to current thinking on a rights-based approach to development, adopted by government development agencies throughout the world (Albert, 2004).

Activity III

Discuss the below given classroom/school scenarios and analyze each of these to see which perspective of disability does each reflect:

A wheelchair using student is unable to get into a building with stairs because of the absence of ramp. Seeing this, a non-teaching staff member says “naturally, this student will not be able to enter because she is on wheel chair, what is the big deal about it anyway

A course leader meets with a visually impaired member of the group before the beginning of a course to find out how hand-outs can be adapted so that the student can read them

A teacher makes hand out of the day’s discussion available to all members of the group before a lecture. This allows dyslexic students to look up unfamiliar terminology before the lecture, and gives them an idea of the structure that will be followed. This ‘framing’ helps students to understand the transactions better;

A teacher carries on with her classroom discussion in a class with a partially sighted child. She distributes hand outs but does not provide hand outs in larger font for the partially sighted student justifying that the student should cope with the givens. The student is thus deprived of participation in the class discussion.

Human Rights Model

The UN Convention on the Rights of Persons with Disabilities (UNCRPD)

The rights based model of disability can be clearly understood from the UNCRPD (2006)

The UNCRPD is an international human rights treaty of the United Nations intended to protect the rights and dignity of persons with disabilities. The rights model is primarily a fight for access to the privileges people would otherwise have had if they were not disabled. A focus on rights is not a struggle for fundamental social change; rather, it strives to make changes within the existing system.

A human rights approach to disability acknowledges the rights of people with disabilities and views social structures and policies restricting or ignoring the rights of people with disabilities as often leading to these disabled peoples’ discrimination and exclusion. A human rights perspective requires society, particularly governments, to actively promote the necessary conditions for all individuals to fully realize their rights.

Bio-psychosocial Model

The bio-psychosocial model of disability situates disability as rooted in an amalgamation of factors at the physical, emotional and environmental levels.

This approach or model goes beyond the individual and emphasizes issues that interact to affect the ability of the individual to maintain as high a level of health and wellbeing as possible and to function within the society. This approach is consistent with the WHO’s revised definitions of disability. (Smeltzer, 2007)

Disability is an umbrella term, covering impairment, activity limitations and participation restrictions. Impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual while trying to involve in life situations. Disability is thus not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person's body and features of the society in which he or she lives. Overcoming the difficulties faced by people with disabilities requires interventions to remove environmental and social barriers.

The bio-psychosocial model thus recognizes that disabilities are often due to illness or injury and does not dismiss the importance of the impact of biological, emotional and environmental issues on health, well-being and function in society.

Disability as a Multiple Identity

Disability is the quintessential post-modern concept, because it is so complex, so variable, so contingent, so situated. It sits at the intersection of biology and society and of agency and structure. Disability cannot be reduced to a singular identity: it is a multiplicity, a plurality. An adequate social theory of disability would include all the dimensions of disabled people's experiences: bodily, psychological, cultural, social, political, rather than claiming that disability is either medical or social" (Shakespeare & Erickson, 2000).

Affirmation Model of Disability

A new model of disability is emerging within the literature by disabled people and within disability culture, especially emerging in the Disability Arts Movement called the affirmative model. It is essentially a non-tragic model of disability to include positive social identities, both individual and collective, for disabled people. The affirmation model balances the limitations of the social model through the realization of positive identity encompassing impairment, as well as disability.

1.7 DIVERSITY AND INCLUSION IN EDUCATION

Classroom is a cross section of society where the diversity existing among people in the community is reflected. The increasing number of learners from diverse backgrounds admitted to elementary classrooms has reinforced the importance of making schools more inclusive. With a relatively much higher variation in the talents, and social, cultural, economic and political backgrounds of the learners, a teacher is expected to transfer the understanding and position about diversity into the classroom processes, identify and recognize the threads of diversity among learners in order to address the corresponding issues and challenges with respect to curriculum design, teaching-learning practices and processes and learning materials, so that subsequently the different learning needs of children are met. Precisely, the elementary classroom in India is confronted with an immense challenge of weaving in diversity constructively into classroom processes to democratize these processes and practices, all geared to the larger goal of social justice.

Inclusion is an unrelenting process of augmenting learning and participation for all students irrespective of their differences. It is an ideal to which schools can aspire but which is seldom fully reached. But as soon as the process of increasing participation of all diverse learners starts the school is in the path of moving towards inclusion. Participation means actively engaging in learning with others while sharing learning experiences and engaging in collaborative learning. Inclusion starts when exclusionary

pressures are removed, the differences between students is respected and each one in the class group feels recognized, accepted and valued for what he or she is.

In the context of diversity, the importance of the agenda of “inclusive education” is further reinforced by the enactment of the Right of Children to Free and Compulsory Education (RTE) Act, 2009 and the Rights of Persons with Disabilities Act, 2016.

Inclusion as Philosophy

Inclusion is a philosophy, a mindset, a conviction that every person has the right to enjoy equal opportunities and live with equal dignity, irrespective of how different they are from the others in any group they belong to. The philosophy of inclusion goes beyond physical inclusion and incorporates a system of basic values and beliefs that promotes the participation and sense of belonging of every member in any group. Hence, you can make inclusive education a reality in your class only when you have the conviction and belief in inclusive educational practice.

Inclusive Practices

Inclusive education makes it possible for all students to study in their neighborhood schools in age-appropriate, regular classes. In this situation, they are supported to learn, contribute and participate in all aspects of the life of the school. All students mean every child irrespective of abilities, disabilities, socio-economic background and gender, religious and regional belongingness. Inclusive education is about how we develop and design our schools, classrooms and activities so that all students learn and participate together.

Let us see what inclusion in education is more closely:

- It is a process to bring all students together in one classroom and school, regardless of their strengths or weaknesses in any area, and it seeks to maximize the potential of all students
- It is a process where diversity in a group with respect to any aspect is appreciated and in which everyone is recognized and respected for his/her worth
- It is an effort to make sure that diverse learners – those with disabilities, different languages and cultures, different homes and family lives, different interests and ways of learning – are taught using teaching learning strategies adapted to individual learning needs
- It is a process that allows every individual to feel accepted, valued, and safe. An inclusive community consciously evolves to meet the changing needs of its members. Through recognition and support, an inclusive community provides meaningful involvement and equal access to the benefits of citizenship
- It is a means of enhancing the well-being of every member of the community.

Activity IV

Reflect on the following classroom processes and values and beliefs of teachers and examine if they are conducive to an inclusive classroom ethos or not:

Some children are valued more than others in a group

Some students’ participation in the curricula and other activities of school is curbed due to barriers in the classroom

Maintaining school policies and practices which are non-responsive to the diversity of learners thus fostering inequalities

A perspective that inclusion mostly concerns disabled learners and that school changes made for disabled children will only benefit them

Differences between students are problems to be overcome

Segregated schooling for disabled learners violates their basic human right to education without discrimination.

Academic achievement seen as the main aim of schooling, thus being prejudiced against the disabled children and being unable to see the abilities and capabilities in them. Inclusion in education seen as a separate phenomenon not in zinc with inclusion in society

Reflect on the following views about inclusive education

1. *Inclusion jeopardizes the education of those without impairments*
2. *Full inclusion (placing all students with disabilities in general education regardless of the nature or severity of their disabilities) is mandated by law.*
3. *Segregating students with disabilities has been effective.*
4. *“I’m sorry, but they have nothing to do with me.” (The “THEM” and “US” mindset.)*
5. *“Inclusion is another educational fad. The pendulum will swing back to segregated education.”*
6. *Special education is being phased out because of inclusion. So this area of study does not have good prospects.*

(adapted from Villegas, 2015)

See the following facts and perspectives corresponding to each of the above views:

1. *When it is done correctly, supported inclusive education enriches the quality of education. Research has consistently documented the benefits for all students. Denying diversity diminishes the lives of students with and without disabilities.*
2. *Far from mandating full inclusion, law mandates placement in the least restrictive (least segregated) environment that is most appropriate for all students on a case-by-case basis.*
3. *The outcomes of systematic, segregated special education such as denial of civil rights, learned helplessness, social distancing, and diminished quality of life are all unacceptable. Adults with disabilities are the least employed, poorest, least educated, most excluded of all.*
4. *This is about all of us. We all become disabled due to aging, unless we die early. Any one of us may become severely disabled due to injury or illness. This is the one minority group we all get to join. What we do to improve quality of life for people with disabilities, we do for ourselves.*

- 5. *A return to completely segregated special education would take the repeal of our constitutional amendments and policies, the repeal of years of legislation, and overturning nearly many years of litigation.*
- 6. *The number of segregated settings for students with special needs has decreased, not special education. There is a worldwide, nationwide shortage of special educators. Because of inclusion, we need more special educators than ever.*

Inclusive education, therefore, means much beyond just enrolment of CwDs to a feeling among all learners of an equal sense of belonging to the school, irrespective of their backgrounds. Inclusive classrooms and schools in this sense would mean a place where diversity among learners is appreciated and considered a learning resource rather than a problem; where children from diverse backgrounds are valued for what they are, and are made to feel safe enough to express whatever they know, without fear or discrimination; and where the curriculum, teaching-learning methods and materials are culturally responsive to meet the different learning needs and interests of children from diverse backgrounds.

Check Your Progress II

- 4. Explain how bio-psychosocial model encompasses the medical and social model.
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- 5. What are the indicators of inclusive education?
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1.8 CONSTITUTIONAL PROVISIONS, POLICIES, PROGRAMMES AND ACTS

International scenario

International organisations, United Nations being the prominent of them, have focused their efforts on the needs of persons with disabilities and their better education and living.

The Declaration on the Rights of Disabled Persons was a declaration of the General Assembly of the United Nations, made on 9 December 1975. **World Conference on Special Needs Education, Salamanca, 1994** and **The UN Council on Rights of Persons with Disabilities (UNCRPD), 2006** have been landmarks in the global efforts in the path of inclusion and empowerment of persons with disabilities.

Indian Scenario

Looking back into our country's history, the Sargent Report, 1944 written prior to independence and the Kothari Commission (1964- 1966) signal the government's approach of integration of children with disabilities with other children. This was reiterated in the National Policy of Education (1986). The RCI Act (1992) and National Trust Act (1999) were the subsequent major legislations in this field. The Persons with Disabilities Act, 1995 (PWD Act) has been a landmark in the path of legislations in welfare of people with disabilities. This act has been replaced by the Rights of Persons with Disabilities Act 2016.

Constitutional Provisions

It is stated in the preamble of the Constitution of India that people of India solemnly resolved to constitute India as a Sovereign, Socialist, Secular and Democratic, Republic which secures to *all* its citizens right to Justice; Liberty; Equality; and Fraternity. The Constitution guarantees Fundamental Rights to all its citizens. There are specific provisions in the Constitution of India that ensure social justice and empowerment to all citizens including "persons with disabilities" and other disadvantaged and marginalized groups.

Legislations, Policies and Programmes

Over the years, the government of India (GoI) has launched various programmes and schemes dedicated to fulfilling the education and inclusion of children with disabilities. India became signatory to the Salamanca Statement, 1994 and with it came the incorporation of the term 'inclusive education' in various official documents and reports of GOI.

There have been several attempts by the Government in the form of Acts, Rules and Regulations, Policies and Guidelines for the welfare of persons with disabilities.

The legislative framework for the protection of the rights of persons with disabilities is covered by the following Acts:

The Mental Health Act (1987) consolidates and amends the law relating to the treatment and care of mentally ill persons to make better provision for them.

Rehabilitation Council of India (RCI) Act (1992) deals with the development of manpower for providing rehabilitation services. The Act was amended by the Parliament in 2000 to make it broad based. The RCI standardizes syllabi and maintains a Central Rehabilitation Register of all qualified professionals and personnel working in the field of Rehabilitation and Special Education. The Council also regulates and monitors the training of rehabilitation professionals and personnel, promoting research in rehabilitation and special education.

Persons with Disability (Equal Opportunities, Protection of Rights and Full Participation) Act (PWD Act- 1995) is one of the key acts, which provides for education, employment, creation of barrier free environment, social security etc of persons with disabilities. As per the Act every child with a disability has access to free education in an appropriate environment until he or she attains the age of eighteen years. This Act has been replaced by Rights of Persons with Disabilities Act (RPwD Act), 2016.

National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disability Act, (National Trust Act-1999) The Act has provisions for legal guardianship of persons under each of the four categories of

disability and for creation of enabling environment for as much independent living as possible. The main objectives are to enable and empower persons with disabilities to live as independently and as fully as possible, to extend support to registered organizations providing need based services, and to evolve procedure for appointment of legal guardians for persons with disabilities requiring such protection’.

The Right to Education Act (RTE Act), 2009

The RTE Act provides for the right of children to free and compulsory education to the children of 6-14 years age group including children with special needs.

The RTE Act was subsequently amended in 2012 which came into effect from 1 August 2012 and contains provisions relating to children with disabilities such as:

- (i) Inclusion of children with disabilities in the definition of “child belonging to disadvantaged group” under Clause (d) Section 2 of the RTE Act.
- (ii) Children with disabilities (including children with cerebral palsy, mental retardation, autism and multiple disabilities) shall have the right to pursue free and compulsory education.

The Rights of Persons with Disabilities Act (RPWD Act), 2016

As mentioned earlier, this Act Rights of Persons with Disabilities (RPwD) 2016 has replaced the existing PwD Act, 1995. In this Act disability has been defined based on an evolving and dynamic concept. The types of disabilities have been increased to 21 and the Central Govt has power to add more types of disabilities. The new Act is in line with the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), to which India is not only a signatory but one of the early countries to ratify.

The 21 disabilities are given below: -

1. Blindness
2. Low-vision
3. Leprosy Cured Persons
4. Hearing Impairment (deaf and hard of hearing)
5. Locomotor Disability
6. Dwarfism
7. Intellectual Disability
8. Mental Illness
9. Autism Spectrum Disorder
10. Cerebral Palsy
11. Muscular Dystrophy
12. Chronic Neurological Conditions
13. Specific Learning Disability
14. Multiple Sclerosis
15. Speech and Language Disability
16. Thalassemia
17. Hemophilia

18. Sickle Cell Disease
19. Multiple Disabilities including Deaf-Blindness
20. Acid Attack Victims
21. Parkinson's Disease

National Programmes

Some of the important national level programmes in the field of education of CwD are presented below:

Sarva Shiksha Abhiyan (SSA)

The SSA attempts to implement inclusive education of children with disabilities and provides multiple options for these children. It ensures that every child in the age group of 6-14 years with any kind of impairment, irrespective of the kind, category and degree of impairment, is provided meaningful and quality education. It extends the range of options from special and mainstream/ 'regular' schools to Education Guarantee Scheme/Alternative and Innovative Education (EGS/AIE) and Home-Based Education (HBE). Each district is given the necessary flexibility to plan activities depending on the resources available for the effective implementation of inclusive education programme.

Under the scheme of Home Based Education (HBE) within SSA, children with severe disability can be educated within home-based and alternate educational settings to enable them to achieve independent living skills.

Inclusive Education for Disabled at Secondary Stage (IEDSS)

IEDSS is a Centrally Sponsored Scheme of GOI the aim of which is to enable all students with disabilities, to pursue four years of secondary schooling i.e. classes IX to XII after completing eight years of elementary schooling (Class I –VIII) in an inclusive and enabling environment. The Scheme of Inclusive Education for Disabled at Secondary Stage (IEDSS) was launched in 2009-10 replacing the earlier scheme of Integrated Education for Disabled Children (IEDC). The IEDSS Scheme will cover all children passing out of elementary schools and studying at secondary stage in Government, local body and Government-aided schools in the age group 14+ to 18+ (classes IX to XII).

Rashtriya Madhyamik Shiksha Abhiyan (RMSA)

The RMSA scheme was launched in March 2009 with the objective to enhance access to secondary education and improve its quality. The scheme aims to enhance the enrollment of students at secondary stage by providing a secondary school within a reasonable distance of habitation, targeted to ensure general enrolment rate of 100% by 2017 and universal retention by 2020.

What is evident from the constitutional provisions, acts and policies and national programmes is that there is a focus on the education of children with disabilities in all these with an obvious movement towards inclusive education. The ball has started rolling although it is a long way ahead for us.

1.9 LET US SUM UP

Inclusion as a philosophy or practice cannot be discussed meaningfully unless it is situated in the context of diversity across the members of the group, especially in the framework of inclusive education. It is diversity that brings in the advocacy for equity

and justice for each of the diverse persons in a group irrespective of their abilities, disabilities, social status, religion, class, caste and so on and so forth. It is diversity and exclusion of some who are not like the majority in their group that has given rise to inclusion as a significant discourse in today's academia. Because of the process of social exclusion, the affected individuals or communities are prevented from participating fully in the economic, social, and political life of the society in which they live. Alienation or disenfranchisement resulting from social exclusion applies to people with a disability, people from minority groups, Lesbian, Gay, Bisexual and Transgender people, drug users, HIV positive patients, sex workers, orphans, the elderly etc. People with disabilities are among the most vulnerable groups who are at risk of social exclusion.

History sketches a clear progress of general attitude of society and policy regarding people with disabilities - shift from exclusion to inclusion, through three phases: the era of exclusion, extermination, neglect and denial; the era of segregation; the special school; and the era of integration moving to inclusion.

Analysis of models of disability that can be seen to correspond to the societal response to persons with disability brings to light charity model, driven largely by emotive appeals of charity, the medical model that views disability as a 'problem' that belongs to the disabled individual, the traditional rehabilitation model that believes that disability is a challenge which can be overcome with adequate effort on the part of the person, the social model that views disability as socially constructed, human rights approach that acknowledges the rights of people with disabilities and the bio-psychosocial model that situates disability as rooted in an amalgamation of factors at the physical, emotional and environmental levels. A new model of disability called the affirmative model that is essentially a non-tragic encompassing the positive social identities is the latest in this thread of development.

Inclusive education is a process to bring all students together in one classroom and school, regardless of their strengths or limitations in any area, and it seeks to maximize the potential of all students, where everyone is recognized and respected for his/her worth.

Internationally, main declarations and policies have been landmarks in the path of inclusion and empowerment of persons with disabilities. There have been several attempts by the Indian Government in the form of Acts, Rules & Regulations, Policies, Guidelines, etc. for the welfare of persons with disabilities right from 1987 till date.

What is evident from the constitutional provisions, acts and policies and national programmes is that there is a focus on the welfare of persons with disabilities and on the education of children with disabilities with an obvious crusade towards inclusive education. The ball has started rolling although it is a long struggle ahead.

1.10 UNIT END QUESTIONS

1. What all criteria should be considered while deciding the educational placement of a child with disability?
2. How is exclusion important as a premise for inclusion?
3. How does discussion on social inclusion lead one to diversity among people?
4. Is inclusion of children with disability in regular schools THE solution for all types and degrees of disability?

5. In the context of education of children with disabilities what is the significance of special schools?
6. Is inclusive education *THE BEST OPTION FOR EDUCATIONAL PLACEMENT* for all children with disability irrespective of the type and severity of the disability?
7. How do you understand educational inclusion from the perspective of students without disabilities?

1.11 ANSWERS TO CHECK YOUR PROGRESS

1. Disability is a diversity classification that transcends all other indices like class, caste, race, religion, language etc. It represents the only minority group that anyone can become a member, anytime in life.

Disability is an inescapable element of human experience. It is so, first, in the sense that, world-wide, an enormous number of people have disability/ disabilities. Furthermore, disability is arguably more heterogeneous than those of race, gender, class, and sexual orientation as it may affect one's senses or one's mobility; they may be static or progressive, congenital or acquired, body form related (affecting the shape of the body) or functional, visible or invisible.

For people with a disability and other attributes that make them distinct from the mainstream disability becomes their master label, their primary identifying characteristic over-looking the others. So, disability is a more fundamental form of diversity than differences in race, religion, ethnicity etc.

2. At the core of analysis of social inclusion lies the concept of full participation in all aspects of life, while exclusion refers to the conditions that hamper inclusion. Social exclusion is the process of relegation of individuals or social groups to the fringe of society; they are systematically denied full access to various rights, opportunities and resources that are normally available to members of mainstream groups, and which are fundamental to social integration within these groups. Social inclusion is the process to ensure equal opportunities for all, regardless of their background, be it money, class, ethnicity, gender, race or whatever the index of diversity be, to enable full and active participation in all aspects of life, including civic, social, economic, and political activities, as well as participation in decision-making processes.
3. People with disabilities are the most vulnerable and at risk of social exclusion. They are excluded from essential services for living such as food, clothing, basic education and health care, employment opportunities and such other essentials which ultimately affect their participation in the activities of the people around eventually leading to their exclusion from the society. They are looked upon as invalid; are at risk of violence, abuse and exploitation and miss out any chance for protection of their rights. The societal systems fail to provide facilities for early detection, identification and intervention to infants and young children with disabilities and provide support to their parents and caretakers. Denial of education to children and youth with disabilities results in their alienation from access to vocational training, employment and income generation. This in turn affects their economic and social independence leading them to poverty perpetuated generation after generation.
4. The bio-psychosocial model of disability situates disability as rooted in an amalgamation of factors at the physical, emotional and environmental levels. It

recognizes that disabilities are often due to illness or injury and takes into consideration the impact of biological, emotional and environmental issues on health, well-being, and function in society.

5. It brings all students together in one classroom and school, regardless of their strengths or limitations in any area, and it seeks to maximize the potential of all students

Diversity in a group with respect to any aspect is appreciated and everyone is recognized and respected for what he/she is worth

Efforts are made to make sure that diverse learners are taught using teaching learning strategies adapted to individual learning needs

Every individual is helped to feel accepted, valued, and safe, thus enhancing the well-being of every member of the community.

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UNIT 2 CHILDREN WITH SENSORY AND SPEECH DISABILITIES

- 2.1 Introduction
- 2.2 Objectives
- 2.3 Visual Impairment: Nature, Needs, Assessment, Intervention and Teaching Strategies
- 2.4 Hearing Impairment: Nature, Needs, Assessment, Intervention and Teaching Strategies
- 2.5 Speech Impairment: Nature, Needs, Assessment, Intervention and Teaching Strategies
- 2.6 Let us Sum Up
- 2.7 Reflective Questions
- 2.8 Answers to Check Your Progress
- 2.9 References and Suggested Readings

2.1 INTRODUCTION

Generally, sensory disabilities are those in which sensory organs of human beings are affected. You know the importance of sensory organs in learning. Among the five senses, vision and hearing are predominantly used in the class room. Tactile/kinesthetic sense is also used but to some extent. As a student teacher, you should know the three-main sensory disabilities i.e. Visual, Hearing and Speech impairment. In this unit, we will discuss these sensory disabilities, their nature, needs, assessment, intervention and teaching strategies in detail.

2.2 OBJECTIVES

After reading this chapter/unit, you will be able to:

- Provide an overview of students with sensory impairments/disabilities.
- Describe the concept of visual impairment, hearing impairment and speech impairment.
- Describe the characteristics of students with various sensory disabilities.
- Describe various educational needs of students with sensory disabilities.

2.3 VISUAL IMPAIRMENT: NATURE, NEEDS, ASSESSMENT, INTERVENTION AND TEACHING STRATEGIES

According to the census, 2011 children with visual impairments comprise the largest number of children in any one category served. The development of concepts, the understanding of spatial relations, and the use of printed material depends on children's ability to use vision. According to Li (2004) "Vision is intimately involved with 70% to 80% of all tasks that occur in our educational programmes". Therefore, we may say that 80-90% of all information is received by our visual sensory organ i.e. eye.

Here we will try to understand the definition, nature and needs, educational interventions and teaching strategies for children with visual impairments in detail.

Definition and Types of Assessment of Vision

According to the Rights of Persons with Disability Act 2016, **Blindness** “blindness” means a condition where a person has any of the following conditions, after best correction— (i) total absence of sight; or (ii) visual acuity less than 3/60 or less than 10/200 (Snellen) in the better eye with best possible correction; or (iii) limitation of the field of vision subtending an angle of less than 10 degree;

Low-Vision

“low-vision” means a condition where a person has any of the following condition’s, namely: — (i) visual acuity not exceeding 6/18 or less than 20/60 up to 3/60 or up to 10/200 (Snellen) in the better eye with best possible corrections; or (ii) limitation of the field of vision subtending an angle of less than 40 degree up to 10 degree.

Assessment of Visual-Impairment

Assessment is an important part for planning the educational programme. The two types of assessment of vision are clinical and functional assessment. Based on visual acuity and field of vision as given in the definition, if assessment is done by an eye doctor with the help of equipment and machines, it is called as clinical assessment of vision. Visual acuity is the ability of the eye to see the distant objects clearly. If one is suffering from visual impairment in terms of visual acuity i.e. the has loss of visual acuity compared to normal vision in terms of 3/60 Mts. or, 10/200 Ft. after clinical remedy. This is measured by Snellen chart or, through computerised machine. The field of vision is also limited to 10 degree as compared to sighted person. On the other hand, if we assess based on visual task, it is called as functional assessment of vision.

Identification of Student’s with Visual Impairment

To identify children with visual impairment by teachers or parents in school or at home, it is important to follow ‘ABC’. It is generally done based on appearance (A) of eye, behaviours (B) of students and complaints (C) of students. The teachers hence, need to be aware and knowledgeable about the behavioural manifestations of children with partial and full visual impairment. They are as follows:

- Frequent watering of eyes.
- Frequent red or inflamed eyes.
- Jumpy and un-synchronized eye movements.
- Difficulties experienced in moving around, bumping into things, doors and other objects.
- Difficulty experienced in reading small print, or identifying minute details in pictures or illustrations.
- Complaints of dizziness after completing a visual task like reading, drawing or writing.
- Needs to exert, and change positions, e.g. tilting of the head, or squinting to focus better.
- Frequent complaints of headaches or eye infections.

- Difficulties in coordinating both the eyes i.e. a tendency to use one eye more than the other.
- Clumsy movements.
- Severe problems with mobility and orientation. Mobility refers to the ability to move around in the environment. Orientation refers to the ability to know one's place or position in the environment i.e. Am I near a railway station? Is the fish market to my left? And so on.
- Repetitive stereotypic movements, referred to as "blindisms" e.g. rocking, hand weaving, head rolling. It is believed that these behaviours are due to under stimulation. Babies and young children who are sighted are more observant while a lack of visual feedback deters a blind child to explore. By increasing infant stimulation these behaviours could be reduced or eliminated.

Immature social behaviours / skills, Lack of visual feedback and appropriate intervention results in the poor social maturity of children with visual impairment. However, adequate intervention makes them develop appropriately, later. Poor understanding of feelings and emotions is also observed in these children.

Visually Impaired children's early language development tends to be more self-centred and they talk less about other people and objects. They also tend to be very self-conscious when with other people.

Teaching Strategies and Intervention for Children with Visual Impairment

Visual impairment is caused by absence of sight and/or impaired vision. We know that eye is the biggest gateway (sense organ) of information from the external world in our body. We receive more than 80% of knowledge through the sense of seeing (vision). This means that those who cannot see are deprived of the opportunity of gaining this knowledge directly from surroundings. But, the shining stars on the horizon in the history of education of the blind who were themselves visually impaired achieved great heights in scholarship despite their visual impairment. For example, Homer, the Greek poet, Milton, an English poet, Nicholas Sanderson, the great mathematician and Helen Keller who was both deaf and blind attained name and fame in literature and mathematics. Surdas from India and AbdulAllam UIAlmaria from Baghdad are also well known for their contribution to human development. There are several others who were blind, have made their contribution in our society and world.

Indeed, Vision serves the purpose of integrating the information received by other modalities and is important in the formation and refinement of concepts. Absence of vision deprives a person of such a privilege. It is often said that 80% of knowledge is gained through vision and 95% knowledge is received through vision and hearing. This implies that in the absence of vision and hearing, learning may not take place at all. It is a myth, as many people in the absence of sight have acquired a great degree of success in all spheres of human learning. But to taste this success, an additional effort is required. Therefore, we must say that vision is an important sense but one can do and serve the society without vision.

Principles of Using Instructional Materials

Children with visual impairment learn the same content as that of non-disabled but the mode through which it is taught is different. The instructional material used to explain a concept are specifically designed / modified so that the child with visual impairment learns using other senses or with the residual vision. Most of all, selection

of the right teaching learning material (TLM) is important, depending on the nature and needs of the person with visual-impairment.

In order to give the blind child knowledge of realities around him, the teacher must aim at providing him with a wide variety of **concrete experiences**, thus making up to a certain extent for the limitation in the range and variety of his experiences. Concreteness in teaching can be achieved essentially in two ways: by having the children observe/experience the object or situation itself, or by providing them with a model of the object. Wherever possible, real experiences are preferred. Children must be given sufficient time for observation and experiences. Diagrams and embossed maps are most valuable from the early school years onwards in developing spatial concepts and basic relationships needed for orientation and other purposes.

Blind children are at a serious disadvantage in experiencing things and situations in their totality. Touch permits observation of objects that can be embraced by hands or body. Vision permits a unification of observations and it structures and organizes discrete impressions received by other sensory organs. The lack of unifying integrative experiences, of gestalt formation, must be counteracted by teachers who give blind children opportunities to experience situations in their totality and to **unify part-experiences into meaningful wholes**. The teaching by study units is an important means of achieving this end.

Because of their blindness and because of the environmental reactions to this impairment, blind children have significantly less opportunities for **self-activity**. Therefore, special attention must be given at home and in school to encourage blind children to do as many things for them as are desirable and compatible with a well-conceived time economy. The general approach of teachers should be to encourage blind children to learn to do things by themselves with as little assistance as possible. The teacher needs to distinguish between tasks and skills that are essential for the child to perform at a given stage of his development and those which must be left for later days or need not be mastered at all. About creative activities of blind children, educators should not impose their 'seeing taste on blind children but let them create things according to their own concepts and emotions.

We need to understand the nature and needs of visual impairment so that we can impart education to them. The instructional methods will be adapted as per the needs of visual impairment. We should give information through the remaining sense organs. In fact, blindness reduces the confidence in the remaining senses and therefore, adequate training would be necessary to orient the children to use other sense organs. Many key areas for sensory training could be essential to compensate the experiences which are based on the visual ideas. In addition to this, the discussion of the non-visual experience to visual idea should consider the following implications towards blindness.

1. Sense of Hearing

The modes through which ideas can be transmitted and education can be imparted to the blind child are auditory and tactual. Sounds are constant in the environment, and although some are loud enough to startle, when repeated consistently and paired with visual or tactile stimuli, it conveys meaning. The sequence of learning to understand and give meaning to sound seems to follow a pattern.

- Awareness and attention to sounds
- Response to specific sounds
- Sound discrimination and recognition

- Recognition of words and interpretation of connected speech
- Selective listening to verbal instructions
- Auditory processing and listening for learning

Since exploration of an object is worth thousand words used for explanation, this area becomes very vital. Objects perceived through touch determine the definiteness of the object and help the individual to form a neat conception of them.

2. Sense of Smell

A good nose voluntarily offers the information of the objects which could be smelt. Smell is a sensible clue for a traveler. During his travel, the smell of a gutter, the smell of smoke from a chemical industry, smell of flowers of a garden, smell of kitchen and so on, are sources of information for him to locate where he is.

3. Sense of Taste

This skill helps a child with visual impairment to associate the names of substances with the taste. For example, sweet, sour or hot could be associated with the substances which provide such experiences.

4. Tactual Sense

Often referred to as the skin sense, the tactual and kinesthetic system involves touch, movement and body positions in space. These senses assume paramount importance, and are the primary learning channels for blind children. This sense also follows a pattern.

5. Kinesthetic Sense

The feeling of the body when responding to the external stimuli, which is otherwise known as the kinesthetic sense, enables the child to get certain information like cold, heat, breeze, elevation of surface and so on.

Check Your Progress 1

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

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

1. Define blindness as defined in the RPwD Act,2016

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2. Mention the criteria to identify children with visual impairment?

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2.4 HEARING IMPAIRMENT: NATURE, NEEDS, ASSESSMENT, INTERVENTION AND TEACHING STRATEGIES

Another efficient and important sensory organ is ear. We receive 15-20% information of total information through our ears. Without hearing ability, it is very difficult to be part of the society. In class room learning situation, hearing and vision are the two major senses that receive information and hence a child with hearing impairment will have difficulty learning like other children. Teachers have to be sensitive to the needs of these children so that they learn optimally. Here, we will try to understand the definition, nature, needs, hearing ability, educational intervention and strategies for teaching children with hearing impairment.

Definition and types of Hearing Impairment

Hearing impairment refers to hearing loss that prevents a person from totally receiving sounds through the ear. If the loss is mild, the person has difficulty hearing faint or distant speech. A person with this degree of hearing impairment may use a hearing aid to amplify sounds. If the hearing loss is severe, the person may not be able to distinguish any sounds. We generally use various terms for hearing loss such as hard of hearing, deafness, hearing impairment or minimal hearing loss. **Deafness** means a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification and that adversely affects a child's educational performance (IDEA, 2004). **Minimal Hearing Loss (MHL)** which is not included in the federal definition of hearing impairment but which can cause problems for students is defined as a loss between 16 and 25 dB (Kardaravek & Pakulski, 2002).

According to the Rights of Persons with Disabilities Act, 2016, Hearing impairment— (a) “deaf” means persons having 70 DB hearing loss in speech frequencies in both ears; (b) “hard of hearing” means person having 60 DB to 70 DB hearing loss in speech frequencies in both ears;

Assessment and Classification of Hearing Impairment

Assessment of hearing impairment may be categorized into two type informal and formal assessment.

Informal Assessment

Teachers have an ideal opportunity to conduct informal assessment related to hearing impairment. Informal assessment focuses on observing students for signs that might indicate a hearing loss. Hence this assessment is totally based on listening ability of students that is observed by parents, family members, teachers and others.

Formal Assessment

If there is a reason to believe that the child has a hearing impairment, a more formal assessment should be provided. Hearing sensitivity of each ear is measured separately and the severity/degree of hearing impairment/hearing loss is generally classified in six categories as per Goodman's (1965) classification and an additional category—slight hearing loss is added between the normal hearing and mild hearing loss especially when assessing the hearing sensitivity of young children.

The most common method of evaluating hearing is the use of **pure-tone audiometry**, in which sounds of different frequencies are presented at increasing levels of intensity. This assessment determines the hearing threshold of the student for different frequency

pure tones in each ear. Another type of formal hearing assessment is **tympanometry screening**, also known as impedance audiometry. Tympanometry screening can detect defects in the middle ear, which could significantly impact education (Salvia & Ysseldyke, 2010).

Table: 1

Classification of Severity of Hearing Impairment

Classification	PTA range in dHBL
Normal Hearing Loss	-10 to 15
Slight Hearing Loss	16 to 25
Mild Hearing Loss	26 to 45
Moderate Hearing Loss	46 to 55
Moderately Severe Hearing Loss	56 to 70
Severe Hearing Loss	71 to 90
Profound Hearing Loss	91 & More

Source: Status of Disability, RCI, 2007

Table: 2

Grades of Hearing Impairment

Grade of Impairment	Audiometric ISO Value	Impairment Description
0 (No Impairment)	25 dBHL or Less (Better Ear)	No or very slight hearing problems, Able to hear Whispers
1 (Slight Impairment)	26-40 dBHL (Better Ear)	Able to hear and repeat words spoken in normal voice at 1 metre
2 (Moderate Impairment)	41-60 dBHL (Better Ear)	Able to hear and repeat words spoken in raised voice at 1 metre
3 (Severe Impairment)	61-80 dBHL (Better Ear)	Able to hear some words when should into better ear
4 (Profound Impairment Including deafness)	81dBHL or greater (Better Ear)	Unable to hear and understand even a shouted voice

Source: http://www.who.int/healthinfo/statistics/bod_hearingloss.pdf

Characteristics and Behavioural Manifestations

During Infancy

1-3 months old	No response to sudden sound such as banging of door or ringing of doorbell
4-6 months old	Unable to locate the sound source.
7-9 months old	Unable to look at the person who make sounds
10-12 months old	No response to their names

During Childhood

- Delayed response to sound
- Cannot hear clearly what others are saying
- Shows difficulty in locating the sound source
- Pays more than usual attention to speakers' facial expression and lip movement while listening
- Gives irrelevant answers or misinterprets instructions
- Requests for repetition during conversation
- Shows poorer ability to understand speech in a noisy environment
- Tends to turn up the sound volume of television
- Incorrect pronunciation
- Delayed language development
- Poor attention in class
- Frequent use of gestures to express themselves, e.g. pointing to what they want
- Easily irritated because of communication difficulty

Types of Hearing Loss

There are four types of hearing loss; i. Conductive, ii. Sensory neural, iii. Mixed and iv. Central. If any part of the hearing system is unable to perform the result is hearing loss.

i. Conductive Hearing Loss

A conductive hearing loss is caused by any condition or disease that impedes the conveyance of sound in its mechanical form through the middle ear cavity to the inner ear. A conductive hearing loss can be the result of a blockage in the external ear canal or can be caused by any disorder that unfavorably affects the middle ear's ability to transmit the mechanical energy to the stapes footplate. This results in the reduction of one of the physical attributes of sound called intensity (loudness), so the energy reaching the inner ear is lower or less intense than that in the original stimulus. Therefore, more energy is needed for individuals with a conductive hearing loss to hear sound, but once it is loud enough and the mechanical impediment is overcome, the ear works in a normal way. Generally, the cause of conductive hearing loss can be identified and treated resulting in a complete or partial improvement in hearing. Following the completion of medical treatment for causes of the conductive hearing loss, hearing aids are effective in correcting the remaining hearing loss.

ii. Sensorineural Hearing Loss

Sensorineural hearing loss results from inner ear or auditory nerve dysfunction. The sensory component may be from damage to the organ of Corti, an inability of the hair cells to stimulate the nerves of hearing or a metabolic problem in the fluids of the inner ear. The neural or retro cochlear component can be the result of severe damage to the organ of Corti that causes the nerves of hearing to degenerate or it can be an inability of the hearing nerves themselves to convey neuro chemical information through the central auditory pathways. The reason for sensorineural hearing loss

sometimes cannot be determined. It does not typically respond favorably to medical treatment, and it is typically described as an irreversible, permanent condition. Like conductive hearing loss, sensorineural hearing loss reduces the intensity of sound, but it might also introduce an element of distortion into what is heard resulting in sounds being unclear even when they are loud enough. Once any medically treatable conditions have been ruled out, individuals with a sensorineural hearing loss can be fitted with hearing aids to give them access to speech and other important sounds.

iii. Mixed Hearing Loss

A mixed hearing loss can be thought of as a sensorineural hearing loss with a conductive component overlaying all or part of the audiometric range tested. So, in addition to some irreversible hearing loss caused by an inner ear or auditory nerve disorder, there is also a dysfunction of the middle ear mechanism that makes the hearing worse than the sensorineural loss alone.

The conductive component may be amenable to medical treatment and reversal of the associated hearing loss, but the sensorineural component will most likely be permanent. Hearing aids can be beneficial for individuals with a mixed hearing loss, but caution must be exercised by the hearing care professional if the conductive component is due to an active ear infection.

iv. Central Hearing Loss

Central hearing loss is caused by a problem with the auditory nerve or sound centers. Sound waves may travel through the ear but this nerve pathway is unable to send electrical impulses to the brain. As a result, the hearing centers do not receive the signals correctly. Central hearing loss can be a result of a head injury or a disease. A common symptom is the ability to detect sound but not being able to understand it.

Teaching Strategies and Intervention for Children with Hearing Impairment

Education of children with hearing impairment in India is just a little over a hundred years old. At present, over 500 schools for the hearing-impaired children are established in the country. The Government established some schools whereas the NGOs run many others. In understanding hearing impairment, from an educational perspective, one needs to consider the age of the onset of the hearing loss and the degree of the hearing loss. Both these have a direct bearing on the child's educational programme. If the loss is pre-lingual i.e. occurs before he learns to speak, the effect is more severe than one who lost hearing later in life. If there was a normal language development till he lost hearing, there would be a lot he has learnt, on which his future learning could be based. This support is totally absent with the pre-lingual deaf child.

The characteristics of children with hearing impairment are as follows:

- **Delayed language development.**

Very limited use of spoken language, and very un-intelligible speech. This is linked to the degree of hearing loss. It is much more difficult for a pre-lingual deaf child to learn to speak than those who have acquired deafness post lingual. (Pre-lingual = before 2 yrs. Post-lingual = after 2 yrs. of age). This is because of the absence of an auditory feedback from the sounds they make. Though Hearing-Impaired child too babbles like his normal peers, he soon abandons it because the child does not get any auditory feedback from his own sounds. It is this lack of feedback among the hearing-impaired children, which is the primary cause for them experiencing severe difficulties with the learning of speech.

- Concentration on lips of the speaker as an attempt to listen.
- The student turns his head towards the speaker to listen, or cups his ears.
- No response when called from the back.
- Turning the volume high while watching TV or listening to the radio.
- Frequent complaints of ear aches, ear discharges, or ear infections.

Problems in interpersonal relations because of communication problems

- Lack of fluency in language comprehension and expression affects his/her cognitive processes like assimilation, abstraction categorization and generalization. Hence learning at an abstract conceptual level i.e., “subjects like geometry, becomes challenging for children with Hearing Impairment (more so with pre-lingual deaf children).
- Hearing Impaired children are also handicapped in varying degrees in the educational achievement.
- Developing reading skills is challenging for these children. This is because of the lack of auditory feedback on which reading is superimposed. With children with hearing impairment, language itself being impaired, achieving reading success is difficult.
- Serious Arithmetic / Math difficulties too have been observed in these children. This is attributed to the subject being totally abstract and the deficient language comprehension of the child with hearing impairment. It is not that they are incapable of learning arithmetic. But what it points to is the need of a greater intensive instruction programme.
- Social Adjustment problems are frequently observed in children with Hearing Impairment. Because of a deficit in communication, many children grow up in relative isolation which results in some developing adjustment problems. They tend to be excessively shy, have difficulties making friends specially those who have nobody to interact with non-verbally. However, when they are with people with Hearing Impairment they mix easily. There is also a ‘Deaf community’ in the world formed by persons with hearing impairment.

The early intervention centres can motivate the family members to take part in the education of hearing impaired children which helps them develop early verbal language skills. In some cases, parents and family members have assumed the responsibility of educating hearing impaired infants and young children with the help from sources such as ENT clinics, speech and language professionals and special educators. They help the children develop early verbal language skills and join mainstream schools.

Activity II

1. Prepare a report on causes of hearing impairment among children.
2. Visit early intervention center in your locality and prepare a report

Check Your Progress II

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

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

3. How do you identify children with hearing impairment in the classroom?

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4. What are the major types of hearing loss?
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2.5 SPEECH IMPAIRMENT: NATURE, NEEDS, ASSESSMENT, INTERVENTION AND TEACHING STRATEGIES

Communication is an important means to connect each other. There are two types of communication namely, verbal and non-verbal. Effective verbal communication requires speech or, speaking ability. Among many causes, if any disorder appears in voice producing organs, it may result in speech impairment and can interfere in learning. In this section, we will try to understand the standard definition, nature, needs, educational intervention and teaching strategies for students with speech impairment. Social-communicative skills, require the child to integrate basic skills from more fundamental developmental domains: language, cognitive, affective, and motor development. Social-communicative skills must be employed to solve interpersonal problems in the context of specific social tasks (Hadley & Schuele1998). Children with language and Speech impairment frequently have social difficulties that limit their inclusion in learning contexts and make it difficult for them to form positive social relationships (Brinton& Fujiki ,2004), which further leads to communication disorders.

Definition and types of Speech and Language Impairment

Adolescents with impaired language comprehension and formulation skills often have trouble keeping up with the linguistic and social demands of peer interaction (Brinton& Fujiki, 2004). The Individuals with Disabilities Education Act, (IDEA), defines the term “speech or language impairment” as a communication disorder, such as stuttering, impaired articulation, language impairment, or a voice impairment that adversely affects a child’s educational performance” (IDEA Act, 2007). As per NSSO (2002) “Speech disability refers to person’s inability to speak properly. Speech of a person is judged to be disordered if the person’s speech is not understood by the listener. Persons with speech disability include those who could not speak, spoke only with limited words or those with loss of voice. It also includes those whose speech is not understood due to defects in speech, such as stammering, nasal voice, hoarse voice and discordant voice and articulation defects. The Rights of Persons with Disabilities Act, 2016 defines speech language disability as a permanent disability arising out of conditions such as laryngectomy or aphasia affecting one or more components of speech and language due to organic or neurological causes.

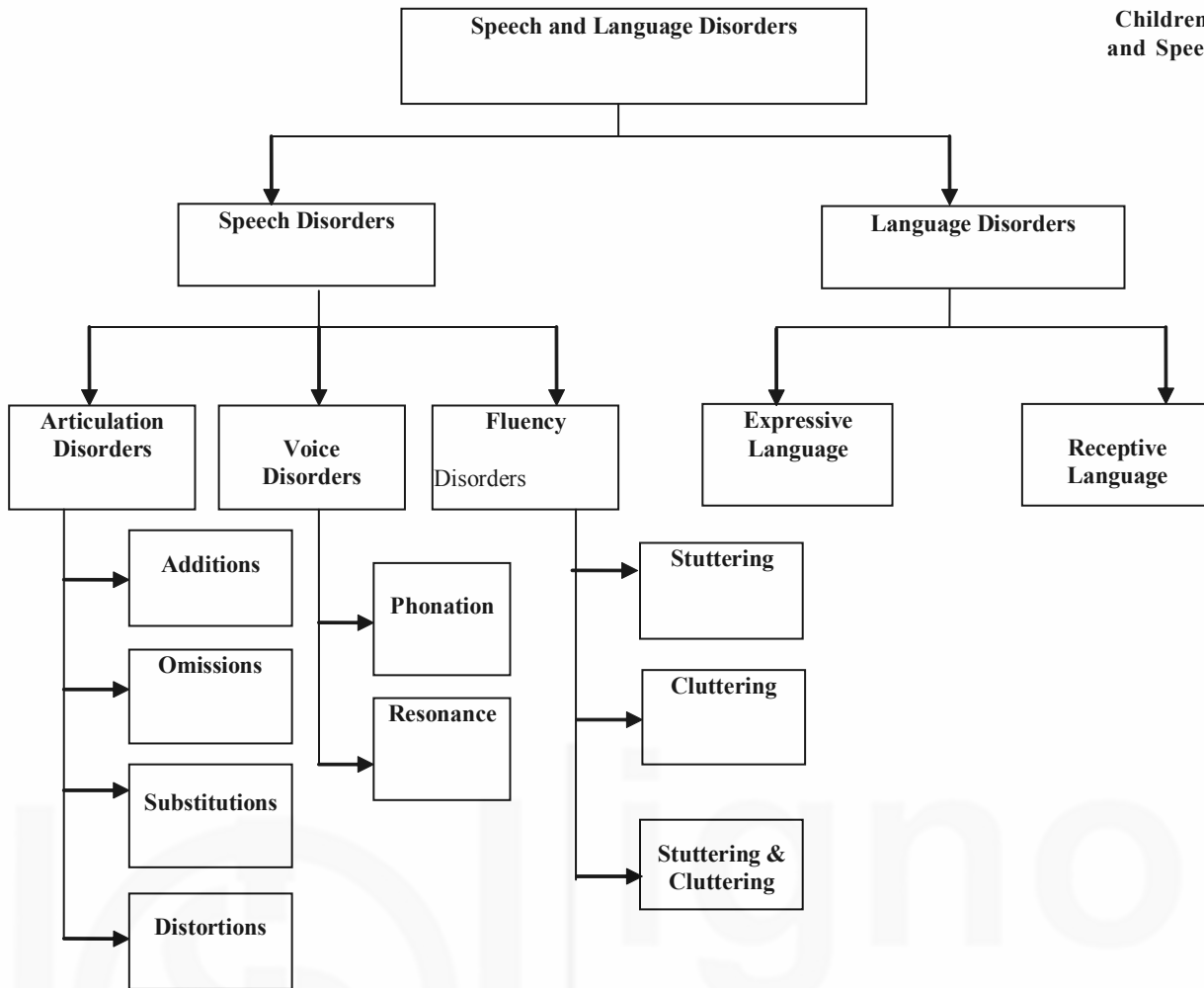


Fig: 1 Showing Categorization of Speech and Language Disorder

Source: Aram, D.M. & Nation, J.E. (1975). Patterns of language behaviour in children with developmental language disorders. *Journal of Speech and Hearing Research*, 18, 229–241

Speech impairments where the child produces sounds incorrectly can be categorized as follows:

Articulation

Articulation refers to correct production of speech sounds of a language. About 3 out of 5 all speech impairments occur due to articulatory disorders (Karanth, 2009).

Distortions

Sounds changed so that the intended sound is recognized, but sounds incorrect, speech of a person with a lisp.

Substitutions

Substituting one sound for another (i.e. “doze” for those)

Omissions

Omitting certain sounds (i.e. “cool” for school or “pos” for post)

Additions

Addition of extra sound (i.e. “buhrown” for brown)

Fluency

Speech impairments where a child's flow of speech is disrupted by sounds, syllables, and words that are repeated, prolonged, or avoided and where there may be silent blocks or inappropriate inhalation, exhalation, or phonation pattern.

Stuttering

Rapid fire repetitions of consonant or vowel.

Cluttering

Rapid speech with extra sounds or mispronounced sounds

Stuttering vs. Cluttering

Involves both cluttering and stuttering.

Voice

Abnormal production or absence of vocal quality, pitch, loudness, resonance and/or duration, which is appropriate for an individual's age or sex." (ASHA, 1993). Speech impairments where the child's voice has an abnormal quality to its pitch, resonance, or loudness can be divided into two distinct categories:

Phonation Disorder

Causes the voice to sound hoarse, husky or strained. Severely, there is no voice at all.

Resonance Disorder

Too many sounds coming out through the air passages of the nose (hyper nasality) or not enough resonance of the nasal passages (hypo nasality).

Language

Language impairment where the child has problems expressing needs, ideas, or information, and/or in understanding what others say. It includes deficiency in receptive language skills to gain information; deficiency in expressive language skills to communicate information; and deficiency in processing (auditory perception) skills to organize information

Incidence and Prevalence

Sreeraj Konadath (2013) found that the prevalence of individuals at risk of communication disorders was 6.07% in India. Among those at risk, and who attended phase II of the study, the prevalence of audio logical and/or ontological disorder was found to be 90.58% and that of speech and language disorder was 9.42%.

Assessment and Classification of Speech Impairment

Several standardized tests and alternative assessment methods have been developed to provide a more in-depth assessment of children who have a possible communication disorder. These tests are intended to further evaluate children when a communication disorder is considered possible due to risk factors and clinical clues, parent or professional concerns, and/or positive screening test results. In-depth assessment can be used in several ways to assess children with possible communication disorders to:

- determine if a communication disorder is present

- establish a specific diagnosis, and assess the severity and specific attributes of the communication disorder
- determine if intervention is indicated, and aid in planning intervention strategies and selecting treatment targets
- establish a baseline for measuring progress and evaluating treatment outcomes

Assessment of Speech or Language Impairments shall include the following

Language Impairment – a significant deficiency in language shall be determined by:

An analysis of receptive, expressive, and/or composite test scores that fall at least 1.5 standard deviations below the mean of the language assessment instruments administered; and a minimum of two measures shall be used, including criterion-referenced and/or norm-referenced instruments, functional communication analyses, and language samples. At least one standardized comprehensive measure of language ability shall be included in the evaluation process.

Levels of Language

1) Phonetics/Phonology

This is the level of sounds. One must distinguish here between the set of possible human sounds, which constitutes the area of *phonetics*, and the set of system sounds used in each human language, which constitutes the area of *phonology*. Phonology is concerned with classifying the sounds of language and with saying how the subset used in a language is utilized, for instance what distinctions in meaning can be made based on what sounds.

2) Morphology

This is the level of words and endings, to put it in simplified terms. It is what one normally understands by grammar (along with syntax). The term *morphology* refers to the analysis of minimal forms in language which are, however, themselves comprised of sounds and which are used to construct words which have either a grammatical or a lexical function. *Lexicology* is concerned with the study of the lexicon from a formal point of view and is thus closely linked to (derivational) morphology.

3) Syntax

This is the level of sentences. It is concerned with the meanings of words in combination with each other to form phrases or sentences. , it involves differences in meaning arrived at by changes in word order, the addition or subtraction of words from sentences or changes in the form of sentences. It furthermore deals with the relatedness of different sentence types and with the analysis of ambiguous sentences.

Language typology attempts to classify languages according to high-order principles of morphology and syntax and to make sets of generalisations across different languages irrespective of their genetic affiliations, i.e. of what language family they belong to.

4) Semantics

This is the area of meaning. It might be thought that semantics is covered by the areas of morphology and syntax, but it is quickly seen that this level needs to be studied on its own to have a proper perspective on meaning in language. Here one touches, however, on practically every other level of language as well as there exists lexical, grammatical, sentence and utterance meaning.

5) Pragmatics

The concern here is with the use of language in specific situations. The meaning of sentences need not be the same in an abstract form and in practical use. In the latter case, one speaks of utterance meaning. The area of pragmatics relies strongly for its analyses on the notion of speech act which is concerned with the actual performance of language. This involves the notion of proposition – roughly the content of a sentence – and the intent and effect of an utterance.

Evaluation of language abilities shall include hearing screening; receptive language: vocabulary, syntax, morphology.

Expressive language: mean length of utterance, syntax, semantics, pragmatics, morphology; and

Auditory perception: selective attention, discrimination, memory, sequencing, association, and integration.

Documentation: including observation and/or assessment, of how Language Impairment adversely impacts his/her educational performance in his/her learning environment. **Articulation Impairment** – a significant deficiency in articulation shall be determined by one of the following:

- articulation error(s) persisting one year beyond the highest age when 85% of students have acquired the sounds based upon current developmental norms; evidence that the child’s scores are at a moderate, severe, or profound rating on a measure of phonological processes; or
- Mis-articulations that interfere with communication and attract adverse attention. Assessment of articulation abilities must include, appropriate formal/informal instrument, stimulus ability probes, oral peripheral examination and analysis of phoneme production in conversational speech. Documentation, including observation and/or assessment, of how Articulation Impairment adversely impacts his/her educational performance in his/her learning environment.

Voice Impairment – Assessment of vocal characteristics shall include the following:

- hearing screening;
- examination by an otolaryngologist;
- oral peripheral examination; and
- documentation, including observation and/or assessment,

Fluency Impairment – Assessment of fluency shall include the following:

- hearing screening
- Information obtained from parents, students, and teacher(s) regarding non-fluent behaviours/attitudes across communication situational peripheral examination; and documentation, including observation and/or assessment.

Characteristics and Behavioural Manifestations

Communication Disorder is impairment in the ability to receive, send, process and comprehend concepts or verbal, nonverbal and graphic symbols systems. A communication disorder may be evident in the process of hearing, language and/or speech.” (American Speech-Language-Hearing Association, 1993). Language impairment refers to an impaired ability to understand and/or use words in context.

A child may have an expressive language disorder viz. difficulty in expressing ideas or needs, a receptive language disorder i.e. difficulty in understanding what others are saying, or a mixed language disorder. Some characteristics of language disorders include:

- improper use of words and their meanings,
- inability to express ideas,
- inappropriate grammatical patterns,
- reduced vocabulary, and
- Inability to follow directions.

Information shall be gathered from the following persons in the evaluation of a Speech or Language Impairment includes: the parent; the child's class teacher; speech-language pathologist or speech-language pathologist; a special educator, when appropriate; a licensed otolaryngologist (for voice impairments only); and other professional personnel, as indicated.

Speech-language pathologists assist children who have communication disorders in many ways. They provide individual therapy for the child; consult with the child's teacher about the most effective ways to facilitate the child's communication in the class setting; and work closely with the family to develop goals and techniques for effective therapy in class and at home. The speech-language pathologist may assist vocational teachers and counselors in establishing communication goals related to the work experiences of students and suggest strategies that are effective for the important transition from school to employment and adult life. Thus, in addition to diagnosing the nature of a child's speech-language difficulties, speech-language pathologists also provide individual therapy for the child; work as a consultant with the child's teacher about the most effective ways to facilitate the child's communication in the class setting; and works closely with the family to develop goals and techniques for effective therapy in class and at home. Speech-language pathology services includes—

- Identification of children with speech or language impairments:
- Diagnosis and appraisal of specific speech or language impairments:
- Referral for medical or other professional attention necessary for the facilitation of speech or language impairments:
- Provision of speech and language services for the facilitation or prevention of communicative impairments:
- Counselling and guidance of parents, children, and teachers regarding speech and language impairments.

Teaching Strategies and Intervention for Children with Speech Impairment

- Concepts using actual objects and progress from the concrete to the abstract.
- Seating positions that facilitate the use of prompts, cues or other strategies during learning and teaching.
- Important to ensure that the student's attention has been secured.
- Slower speech rate to facilitate the processing of information.

- Use of gestures to help students with severe receptive language disorder understands the meaning of a word that symbolizes an object or an action.
- Age appropriate instructions help to involve the students in selecting the strategy that works best for them
- Use of pictures or photographs to reinforce and to develop vocabulary of the students.
- Radio/television broadcasts, puppetry, telephoning, and role playing can be used to develop oral language activities.
- Co-operative learning model can be applied to enhance skills
- Avoiding the role that misunderstanding can have social problems.
- The Speech-Language Pathologist (SLP) provides classroom teachers with information regarding communication development and possible communication concerns through team meetings and training sessions.
- The SLP also provides suggestions for addressing specific areas of concern through modelling and examples of expansion and other techniques.
- Teacher or parent may bring communication concerns to the Student Support Team (SST) for consideration. If a student presents with an obvious disability, the SST should expedite the referral for a Full and Individual Evaluation (FIE).

Activity III

1. Interview a Special Educator working in the field of speech and language impairment and list out challenges faced by him/her and proposed solution to it.
2. How do you help children with speech and language disorders of your class prepare a report.

Check Your Progress III

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

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

5. What percentage of school age population has been identified with speech and language impairments?

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6. What Classroom Adaptations you suggest for Students with Speech and Language Impairments?

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2.6 LET US SUM UP

You would have understood about several types of sensory disabilities as Visual impairment, Hearing impairment, Speech impairment etc. A child with visual impairment has limited vision or may have no vision. We may identify the visually impaired based on appearance (A) of eye, behavior of child (B) and complaint (C) made by child. On the other hand, child with hearing impairment shows delay response in language development, listening activity, cannot hear clearly what others are saying etc. Based on physical appearance, listening activity, we can identify, detect and intervene the child with hearing impairment. The education of children with hearing impairment may provide with language development and suited strategy for them. The other sensory disability is very common as speech and language disorder. Children with speech and language disorder have inability to communicate and include impairment of phonology, voice and fluency, with phonological disorders being the most common. The assessment of this disorder is very particular. It would be based on clinical and functional assessment. Teachers can make numerous accommodations and modifications for students with speech disorders. For example, building a positive classroom environment is an important accommodation for these students.

2.7 UNIT END QUESTIONS

1. How will you identify early the symptoms of visual-impairment in school going children?
2. How will you help students with speech and language disorders in the classroom?
3. How language comprehension and expression is affected in hearing impaired?

2.8 ANSWERS TO CHECK YOUR PROGRESS

1. “Blindness” means a condition where a person has any of the following conditions, after best correction— (i) total absence of sight; or (ii) visual acuity less than 3/60 or less than 10/200 (Snellen) in the better eye with best possible correction; or (iii) limitation of the field of vision subtending an angle of less than 10 degree.
2. Generally we identify the visual-impairment based on three criteria (i) Appearance of eye, (ii) Behaviors of visually impaired and (iii) Complaint by visually impaired.
3. Hearing impaired children are identified based on following symptoms in the classroom
 - Delayed response to sound
 - Cannot hear clearly what others are saying
 - Show difficulty in locating the sound source
 - Pay more than usual attention to speakers’ facial expression and lip movement while listening
4. The four types of hearing loss; i. Conductive, ii. Sensory neural, iii. Mixed and iv. Central
5. About 2% of the school-age population has been identified as having speech or language impairments.

6. Classroom Adaptations for Students with Speech and Language impairments includes building a positive classroom environment, Specific, individualized intervention and instructional modifications (e.g. Storytelling, facilitative play, classroom arrangement).

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UNIT 3 CHILDREN WITH NEURO DEVELOPMENTAL DISABILITIES

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Intellectual Disability: Nature, Needs, Assessment and Intervention
- 3.4 Specific Learning Disability: Nature, Needs, Assessment and Intervention
- 3.5 Autism Spectrum Disorder: Nature, Needs, Assessment and Intervention
- 3.6 Let us Sum Up
- 3.7 Unit End Questions
- 3.8 Answers to Check Your Progress

3.1 INTRODUCTION

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

3.2 OBJECTIVES

On completion of this unit you will be able to

- Demonstrate understanding of the nature and needs of Neuro Developmental Disabilities.
- Elaborate the characteristics of persons with Intellectual Disability (ID), Specific Learning Disability (SLD) and Autism Spectrum Disorder(ASD)
- Describe the causes and prevalence of ID, SLD and ASD.
- Discuss the different types of ID, SLD and ASD
- Demonstrate understanding of educational considerations of persons with ID, SLD and ASD

3.3 INTELLECTUAL DISABILITY: NATURE, NEEDS, ASSESSMENT AND INTERVENTION

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

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

Definition

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

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

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

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

Intellectual Functioning

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

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

Adaptive Behaviour

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

- Conceptual skills-language and literacy; money, time, and number concepts; and self-direction.
- Social skills-interpersonal skills, social responsibility, self-esteem, gullibility, social problem solving, and the ability to follow rules/obey laws and to avoid being victimized.

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

Standardized tests can also determine limitations in adaptive behavior.

Age of Onset

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

Additional Considerations

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

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

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

Source: <http://aaid.org/intellectual-disability/definition> accessed on 29.5.2016

Prevalence and Causes of Intellectual Disability

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

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

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

The following are the causes of ID

1. Genetic conditions
2. Prenatal problems
3. Perinatal problems
4. Postnatal problems (in infancy and childhood)
5. Metabolic disorders
6. Exposure to certain types of disease or toxins.
7. Iodine deficiency (cretinism)
8. Malnutrition.

Types and Characteristics of Persons with Intellectual Disability

● **Educational Classification**

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

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

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

Custodial Mental Retardation (CMR) (IQ below 25)

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

- Pre-primary (up to 6 years),
- Primary (7 to 10 or 11 years),
- Secondary (11 to 15 years)
- Prevocational (16 to 18 years).

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

● **Medical Classification**

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

- Infections and intoxications:
- Trauma or physical agent:
- Metabolism or Nutrition:
- Gross Brain Disease(Post-natal):
- Unknown Prenatal Influence:
 - Chromosomal Abnormality: (Down's syndrome is an autosomal disorder, Trisomy 21, Translocation, Mosaicism, Abnormalities in sex chromosomes, Klinefelter's syndrome Turner's syndrome)

- Gestational Disorder
- Psychiatric Disorders:
- Environmental influence:

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

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

Physical Characteristics

- Microcephaly - abnormally small head
- Hydrocephaly- abnormally large head filled with cerebrospinal fluid
- Down's syndrome - may have thick fingers, moon shaped eyes, short nose, uncovered mouth.
- Cretinism - dwarf-like, coarse and thick skin, short and stubby extremities, thick eyelids, sleepy appearance
- Physical developments at a slower rate
- May manifest acute or chronic health problem

Mental /Intellectual/Cognitive Characteristics

- Short attention span
- Poor judgment
- Poor reasoning and understanding
- Slow in learning
- Poor listening, thinking skills
- Poor at abstraction
- Poor memory
- Lack of motivation
- Lack of creativity
- Slow reaction
- Absence of clarity
- Poor eye - hand coordination

Behavioural Characteristics

- Maladaptive
- Repetitive
- Age inappropriate

- Limited social skills - immaturity in different social situations
- Difficulty in comprehending social situations
- Low frustration tolerance
- Poor self-concept(self-image) Lack of self confidence
- Exhibit restlessness

Academic Characteristics

- Sub average learning and performance in basic academic skills (such as reading, writing and arithmetic)
- Difficulty in activities requiring reading and listening comprehension
- Oral communication skills generally exceed written communication skills
- Limited in incidental learning acquired through experience

Communication Characteristics

- Display limited vocabulary
- Delayed in speech and language development
- Displays articulation disorders
- Limited written communication skills
- Slow processing of questions often resulting in delayed responses
- Poor speech
- Problems in understanding multiple instructions
- Unusual voice

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

Assessment

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

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

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

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

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

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

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

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

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

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

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

Instruction

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

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

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

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

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

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

The teaching goals can be grouped as follows;

- Language skills
- Thinking and Reasoning skills
- Motor skills
- Self-awareness skill
- Social awareness skills
- Discovery of maths, science, computer
- Sensory motor
- Creative arts

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

Promoting Inclusive Practices

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

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

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

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

- acquisition of new skills,
- development of fluency and proficiency,
- maintenance of skills over time,
- generalization of skills learned to other settings, including beyond the school and into the community.

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

Teachers should focus on teaching and learning adaptations that:

- Ensure attention to relevant task demands
- Teach ways to learn content while teaching content itself
- Focus on content that is meaningful to students, to promote learning and facilitate application
- Provide training that crosses multiple learning and environmental contexts
- Offer opportunities for active involvement in the learning process

AREA	POTENTIAL DIFFICULTIES	EDUCATIONAL IMPLICATIONS
Attention	Attention span (length of time on task) Focus (inhibition of distracting stimuli) Selective attention (discrimination of important stimulus characteristics)	<ul style="list-style-type: none"> ● Train students to be aware of the importance of attention. ● Teach students how to actively self-monitor their attention. ● Highlight salient cues in instruction
Metacognition	Metacognition: thinking about thinking Production of strategies to assist learning Organizing additional information	<ul style="list-style-type: none"> ● Teach specific strategies (rehearsal, labeling, chunking) ● Involve students in active learning process (practice, apply, review). ● Stress meaningful content.

<p>Memory</p>	<p>Short-term memory-common deficit area Long-term memory-usually more like that of people who are not disabled (once information has been learned)</p>	<ul style="list-style-type: none"> • Strategy production is difficult; hence students need to be shown how to use strategies to proceed in an organized, well planned manner. • Stress meaningful content.
<p>Generalization Learning</p>	<p>Applying knowledge of skills to new tasks, or situations Using previous experience to formulate rules that will help solve problems of similar nature</p>	<ul style="list-style-type: none"> • Teach multiple contexts. • Reinforce generalization • Teach skills in relevant contexts. • Remind students to apply what they have learned.
<p>Motivational Considerations</p>	<p>External locus of control (attributing events to others' influence) Outer directedness (in learning style) Low expectations by others Failure set (personal expectancy of failure)</p>	<ul style="list-style-type: none"> • Create environment focused on success opportunities • Emphasize self-reliance • Promote self-management • Teach learning strategies for academic tasks • Focus on learning to learn. • Encourage problem solving strategies
<p>Cognitive Development</p>	<p>Abilities to engage in abstract thinking Symbolic thought, as exemplified by introspection and developing hypotheses</p>	<ul style="list-style-type: none"> • Provide concrete examples in instruction. • Provide contextual learning experiences. • Encourage active interaction between student and the environment
<p>Language Development</p>	<p>Difficulty with receptive and expressive language Delayed acquisition of vocabulary and language rules Articulation of thoughts and feelings Possible interaction of cultural variance and language dialects</p>	<ul style="list-style-type: none"> • Create Environment that encourages verbal communication. • Encourage expression of thoughts • Provide appropriate language models. • Provide opportunities for students to learn language for varied purposes and with different audiences.

<p>Academic Development</p>	<p>Delayed acquisition of reading, writing and mathematical skills Decoding of text Reading comprehension Math computation Problem solving in mathematics Self-directed expressive writing</p>	<ul style="list-style-type: none"> • Use learning strategies to promote effective studying • Teach sight words including functional applications. • Teach strategies for decoding unknown words. • Provide strategies to promote reading comprehension and math problem solving • Develop functional writing skills • Adapt curriculum to promote success
<p>Social Behavioral Interactions</p>	<p>Classroom behavior Peer acceptance Displaying emotions appropriately</p>	<ul style="list-style-type: none"> • Promote social competence through direct instruction of skills • Reinforce appropriate behaviors • Seek self-understanding of reasons for inappropriate behavior. • Teach self-management, self-control
<p>Social Responding</p>	<p>Social Perception Gullibility Suggestibility</p>	<ul style="list-style-type: none"> • Involve peers as classroom role models • Provide a support system of peers for positive guidance “buddy system” • Teach resistance to social manipulation • Teach Miranda rights in the legal system

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

Activities for Practice I

1. Visit a special school and observe and write down the common characteristics of children with mental Retardation.
2. Prepare a list of teaching and learning adaptation for children with intellectual disability.

Check Your Progress 1

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

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

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

2. What do you mean by behavioural characteristics?

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

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

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

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

Definition

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

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

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

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

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

Causes

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

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

Types of specific learning Disability:

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

Other Types of Learning Disabilities

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

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

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

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

The Table 1 gives brief description.

Table 1: Processing difficulties in persons with LD

1.	Reading	Dyslexia	<ul style="list-style-type: none"> • Recognizing letters and words • Interpreting information that is presented in print 	<ul style="list-style-type: none"> — Visual Dyslexia — Auditory Dyslexia — Sound Blending — Memory Skill — Letter & word rehearsal
2.	Written expression	Dysgraphia	<ul style="list-style-type: none"> • Writing difficulties • Spelling difficulties • Handwriting difficulties 	<ul style="list-style-type: none"> — Pre-writing skills — Letter formation — Manuscript writing — Cursive writing
3.	Math	Dyscalculia	<ul style="list-style-type: none"> • Difficulties in mathematical concepts & computation 	<ul style="list-style-type: none"> — Shape discrimination — Size discrimination — Sets & numbers — Counting — Auditory visual association — Place value — Computational skills — Measurement — Quantitative language

Characteristics

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

- Disorders of attention
- Poor motor abilities
- Oral language difficulties
- Reading difficulties
- Written language difficulties
- Quantitative disorders
- Social skill deficits

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

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

Academic Difficulties

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

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

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

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

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

Memory Skills

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

Cognitive and Meta Cognitive Skills

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

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

Attention and Hyperactivity

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

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

Perceptual Skills

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

Motivation

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

Social Skills

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

1. Discrepancy exists between a child's ability and academic performance across one or all skill areas.
2. Academic learning difficulty - problems exist in reading, writing, spelling and mathematics.

3. Perceptual disorders -problems include inability to recognize, discriminate and interpret sensation. It can be in auditory or visual channel
 - Meta-cognitive deficits
 - Planning
 - Checking the out come and remediation of errors
 - Motor disorders- children with this problem are clumsy, exhibit fine motor difficulties
 - Attention: problems and hyper activity
 - Social and emotional problems

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

- Impulsiveness
- Poor comprehension
- Disorganized
- Having low self esteem
- Having unpredictable behaviour
- Withdrawn
- Poor communication
- Anxiety
- Moody
- Confused
- Having difficulty in problem solving

Assessment of Persons with Specific Learning Disability

Diagnosis of Specific Learning Disabilities

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

Before a specialized evaluation of a student is conducted, pre-referral discussions by teachers regarding the nature of the problem, and what possible modifications to instructions in the classroom might be made are important.

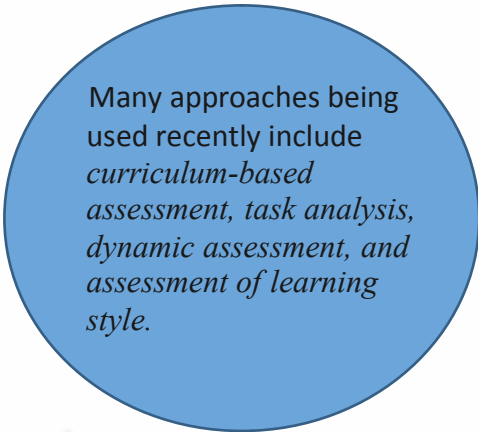
The child must be assessed in all areas related to the suspected disability such as health, vision, hearing, social and emotional status, general intelligence, academic

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

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

The assessment procedure for LD involves the following steps:

- Parental Consent and Parent Interview
- Gathering Information from the Teachers/School
- Looking at Student Workbooks.
- Administering the Tests



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

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

- (1) The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed in paragraph (2) (a) of this section, when provided with learning experiences appropriate for the child's age and ability levels; and
 - (2) The team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the following areas:
 - i) Oral expression,
 - ii) Listening comprehension,
 - iii) Written expression,
 - iv) Basic reading skill,
 - v) Reading comprehension,
 - vi) Mathematics calculation, or
 - vii) Mathematics reasoning
- (a) The team may not identify a child as having a specific learning disability if the severe discrepancy between ability and achievement is primarily the result of:
- i) A visual, hearing, or motor handicaps
 - ii) Mental retardation
 - iii) Emotional disturbances or
 - iv) Environmental, cultural, or economic disadvantage

Assessment Tools

NIMHANS Index

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

Diagnostic Test of Learning Disability (DTLD)

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

Diagnostic Test of Reading Disorder (DTRD)

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

Behavioural Checklist for Screening the Learning Disabled (BCSLD)

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

Intervention of Students with Specific Learning Disability

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

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

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

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

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

1. Presentation
 - Provide on audio tape
 - Provide in large print
 - Reduce number of items per page or line
 - Provide a designated reader
 - Present instructions orally
2. Response
 - Allow for verbal responses
 - Allow for answers to be dictated to a scribe
 - Allow the use of a tape recorder to capture responses
 - Permit responses to be given via computer
 - Permit answers to be recorded directly into the test booklet
3. Timing
 - Allow frequent breaks
 - Extend Allotted time for a test
4. Setting
 - Provide preferential seating
 - Provide special lighting or acoustics
 - Provide a space with minimal distractions
 - Administer a test in a small group setting
 - Administer a test in private room or alternative test site
5. Test Scheduling
 - Administer a test in several timed sessions or over several days
 - Allow subtests to be taken in a different order
 - Administer a test at a specific time of day
6. Other
 - Provide special test preparation
 - Provide on-task/focusing prompts
 - Provide an outline of the day's activities on the board
 - Provide kinesthetic opportunities (i.e. Manipulatives)
 - Recognize success no matter how small

Promoting Inclusive Practices

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

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

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

- Material adaptations
- Instructional delivery adaptations
- Product and assignments adaptations
- Adaptations in home work.
- Adaptations in classroom teaching
- Adaptations in classroom grading.

Activity II

1. List out the difference and similarities between Mental Retardation and Specific Learning Disability.
2. What is the difference between accommodation and modification.

Check Your Progress 1

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

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

3. Name the Types of Specific Learning Disabilities?

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.....
.....
.....

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

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

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

communication and repetitive behaviors.

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

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

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

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

<http://indiatoday.html>.

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

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

Prevalence and Causes of Autism Spectrum Disorder

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

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

Identification of Children with ASD

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

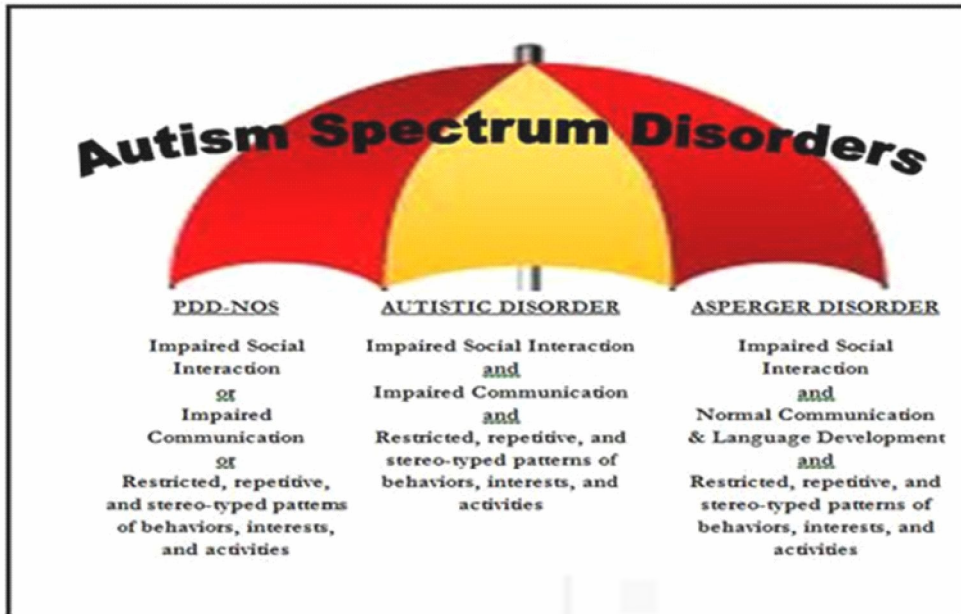
- Children with ASD display characteristics exhibited by individuals with other disabilities, such as speech and language disorders.
- Many children with ASD, because they exhibit disorders across multiple domains are mistakenly classified as having multiple disabilities.
- No stable classification system is used among educators and other professionals who encounter children with ASD.

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

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

Types and Characteristics of Person with Autism Spectrum Disorder

As per the DSM -V the following three conditions are included in Autism spectrum disorder.



Source: DSM V Diagnostic Manual, 2013

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

Social Interactions and Relationships

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

Verbal and Nonverbal Communication

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

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

Activities and Play

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

Assessment of Persons Autism Spectrum Disorder

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

Tests and Tools for Diagnosing Autism Spectrum Disorder

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

Indian Tools

Indian Scale for Assessment of Autism (ISAA)

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

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

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

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

- Autism Diagnostic Observation Schedule (ADOS)
- Autism Diagnostic Interview (ADI)
- Childhood Autism Rating Scales (CARS)
- Modified Checklist for Autism in Toddlers (M-CHAT)
- Developmental Behaviour Checklist (DBC)
- Social Communication Questionnaire (SCQ)
- Psycho Educational Profile - Revised (PEP-R)
- Autism Behaviour Checklist (ABC).

Intervention

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Intervention of persons Autism Spectrum Disorder

Educational Strategies and Approaches for Teaching Students with Autism

- Directions should be given one at a time.
- Avoid giving repetition of the directions
- Break instructions down into smaller chunks

- Confer with other support teachers
- Provide positive behaviour management opportunities
- Provide clear expectations and rules
- Use concrete, tangible visual aids (e.g., pictures and charts).
- Encourage the use of talent areas and provide additional learning opportunities in these areas
- Practice functional real-life skills (e.g., use real money rather than play money when learning to count money).
- Use real places when learning about acceptable public behavior
- Use field trips to provide concrete learning experiences.

Promoting Inclusive Practices

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

- To develop basic language and social skills.
- To provide academic instruction consistent with cognitive level
- To teach functional skills for post school success.
- To provide behavioural intervention to enhance social and functional skills.

Class room Adaptations

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

1. Behavioural Adaptation

- Applied Behavioural Analysis,
- Reinforcement
- Discrete Trial Training,
- Shaping,
- Antecedent Intervention

2. Instructional Adaptions

- Individualised Educational Plan
- Individualised Family Support Plan
- Systematic instruction for meaningful skills
- Creation of structured learning environment.
- Application of functional approach.

3. Selected Curricular Adaptation

- Social Stories
- Picture Exchange Communication System

4. Alternative and Material Adaptation.

Activity III

1. Interview a Special Educator working in the field of ASD and list out the Special talents of children with ASD.
2. Develop a social story for a child with autism spectrum disorder whom you know.

Check Your Progress III

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

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

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

.....
.....
.....
.....

6. What do you mean by Picture Exchange Communication?

.....
.....
.....
.....

3.6 LET US SUM UP

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

3.7 UNIT END QUESTIONS

1. Based on the current knowledge on Neuro Developmental Disabilities, what challenges you visualise in including them in the society?
2. Given an option which are the areas of disability you would render your services and why?
3. What services you will provide for inclusion of children with special needs?

3.8 ANSWERS TO CHECK YOUR PROGRESS

1. Provide concrete examples in instruction, provide contextual learning experiences, Encourage active interaction between student and the environment
2. Behavioural characteristics are maladaptive, repetitive, age inappropriate, limited social skills - immaturity in different social situations, low frustration tolerance, poor self-concept(self-image)
3. Types of SLD are Dyslexia, Dysgraphia, Dyscalculia, Dyspraxia and Non Verbal Learning Disability.
4. Psycho-social problems are impulsiveness, poor comprehension, disorganized, having low self-esteem, having unpredictable behavior, withdrawn, poor communication, anxiety, moody and confused.
5. Social Interactions and Relationships Failure to establish friendships with children
Lack of interest in sharing enjoyment, interests, or achievement with other people
Appearing to be unaware of others Lack of empathy Difficulty relating to people
6. Picture Exchange Communication is a type of augmentative and alternative communication technique where individuals with little or no verbal ability learn to communicate using picture cards. Children use the pictures to "vocalize" a desire, observation, or feeling.

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UNIT 4 CHILDREN WITH LOCO MOTOR, MULTIPLE AND OTHER DISABLING CONDITIONS

- 4.1 Introduction
- 4.2 Objectives
- 4.3 Loco Motor Disabilities: Nature, Needs, Assessment and Intervention
- 4.4 Multiple Disabilities: Nature, Needs, Assessment and Intervention
- 4.5 Other Disabling Conditions: Nature, Needs, Assessment and Intervention
- 4.6 Let Us Sum Up
- 4.7 Unit End Questions
- 4.8 Answers to Check your Progress
- 4.9 References and Suggested Readings

4.1 INTRODUCTION

Every day we interact with our immediate environment with different people, various kinds of objects and involve ourselves in various kinds of activities. The environment, sometimes, may not be suitable to meet our requirement and may hinder our performance or participation in a task. For example, a car driver finds the road not appropriate for his smooth driving, an official using wheelchair finds his office room inaccessible and uncomfortable to work due to inappropriate size of passage in the corridors to move around, inappropriate height of table and electric switches to work with despite an accessible ramp and toilets made in his office building. Similarly, people around us have uniqueness in their appearances, personalities, thoughts, needs, occupations and interactions with others. For example, some people may have fair complexion, some have dark complexion; some may require headphones to listen to their mobile phones, some may be comfortable in using hearing aids. Among several types of activities, we may find ourselves not be fit to participate in some of the activities. For example, an individual may not know to swim hence cannot participate in swimming competition but he/she may be good at drawing and painting and can efficiently participate in painting competition. We all have various kinds of needs. We all have various kinds of skills and competencies. We all find limitations when we interact with our environment. We all try to adapt ourselves to our immediate environment to live a comfortable life. A person with a disability also, tries to adapt him/herself as per the environmental demands, while interacting with his/her environment and experiences barriers that hinder his participation in some activities. In this unit, you will learn about some of the several types of disabilities and their specific nature. You will also learn to assess the needs of these children and plan intervention programmes to prepare them for full and effective participation in school as well as society on an equal basis with others.

4.2 OBJECTIVES

After reading this unit, you will be able to:

- Identify the locomotor disabilities and assess the needs of children with locomotor disabilities.

- Plan intervention programmes for children with locomotor disabilities
- Identify children with multiple disabilities and assess the needs of children with multiple disabilities .
- Plan intervention programmes for children with multiple disabilities
- Identify the other disabling conditions and assess their needs
- Plan intervention programmes for children with other disabling conditions.

4.3 LOCO MOTOR DISABILITIES: NATURE, NEEDS, ASSESSMENT AND INTERVENTION

‘Locomotor Disability’ refers to a person’s inability to execute distinctive activities associated with movement of self and manipulation of objects resulting from affliction of musculoskeletal and/or nervous system. The percentage of persons with locomotor disability is the highest among the total disabled population of India constituting a sizable portion of 20.3 percent population of total individuals with disabilities. The persons with locomotor disabilities face difficulties to use one or more of his/her extremities, or may have lack of strength to walk, grasp, or lift objects. Assistive devices like wheelchair, crutches, or a walker may be utilized to aid in their mobility. Locomotor disability could be the result of disease, injury or malformation of bones, joints, muscles, nerves, spinal cord and brain. This may be Congenital or acquired. Some of the examples of congenital locomotor disability are congenital Talipes Equinovarus (CTEV) or Club foot, congenital dislocation of hip, congenital malformation or deformities of bones and joints. Some examples of acquired locomotor disability are due to tuberculosis spine or joints, poliomyelitis and rickets. Causes are many in acquired conditions like infections, trauma, vascular, metabolic and genetic. The major types of locomotor disabilities are musculoskeletal, congenital malformation, accidents and other chronic disabilities such as polio, rickets, spinal bifida, congenital deformities of hip/s and limb/s, deformities of spine, muscular dystrophy and amputation.

Poliomyelitis, known as polio in short, is an infectious disease. It is caused by a virus and affects the spinal cord and damages the motor cells. It is transmitted by droplet infection and oral ingestion. The incubation period varies from 3-30 days. During the period 7-14 days is the most important interval between infection and clinical illness. After polio, paralysis/weakness of affected limb/s is more usual and one or two limbs get affected.



Figure: Affected lower limbs of a polio affected girl.

The lower limbs are more often affected than the upper limbs. The paralyzed muscles show atrophy i.e. become thin due to lack of nutrition. The imbalance of muscles leads to deformity and contractures. No sensory problem occurs in children affected by polio as the sensory nerves are not involved. The effect of paralysis on growing

limbs results in poor and slow growth and this leads to shortening of limbs, long standing contractures of joints resulting in the separation of joint. The effect of unsupported walking on weak joints may lead to secondary deformities and contractures.

Rickets in children is caused due to deficiency of Vitamin D. It can be seen amongst children usually between 6 months to 24 months of age and above. This deficiency leads to softening of bones of limbs resulting in deformity of lower limbs – commonly, bow legs - and upper limbs. This is a preventable disease and can be treated medically if it is detected at an early stage.

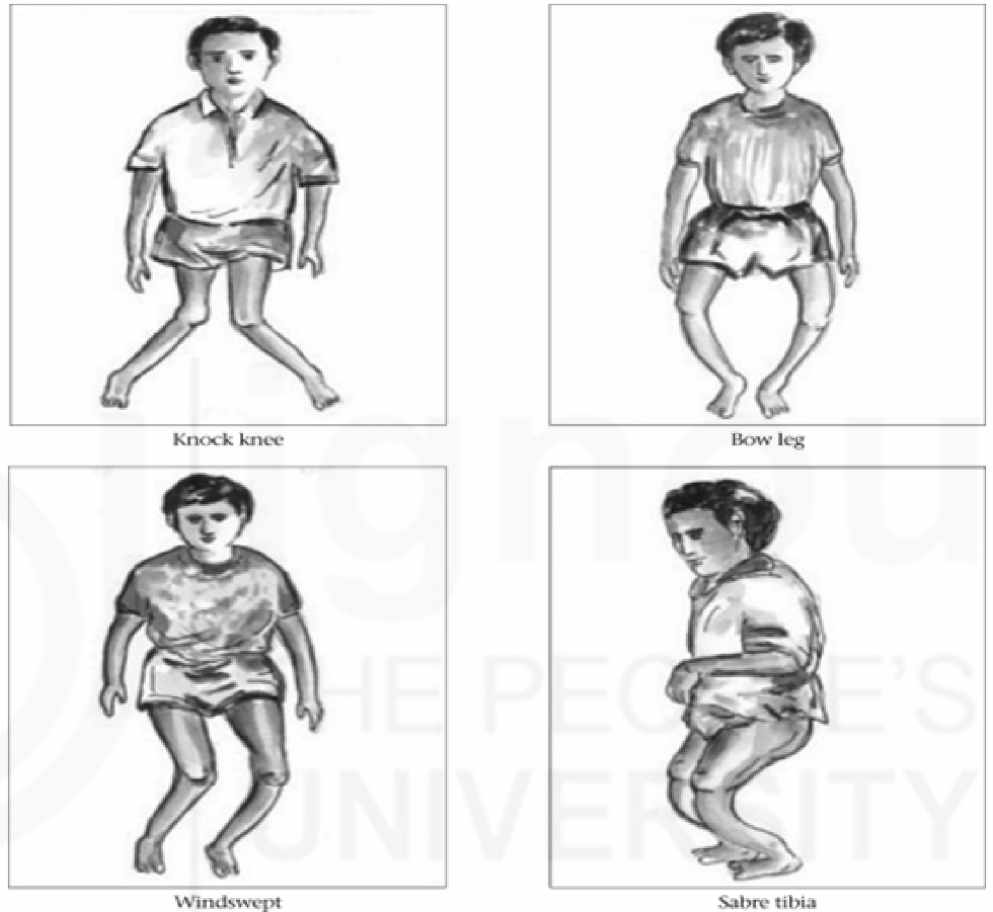


Figure: Different Conditions.

Spina Bifida is a congenital midline defect resulting from failure of the bony spinal column to close completely during fetal development. The development of the spine and spinal column in children with spina bifida is incomplete. The resulting damage to the nerves generally causes paralysis and/or lack of function or sensation below the site of the defect.



Figure: Clump of hair grown in the spinal area of child with spina bifida

Muscular Dystrophy is a group of hereditary genetic degenerative muscle disease causing a progressive weakening and wasting away of muscles tissues that move the human body. Persons with multiple dystrophy have incorrect or missing information in their genes, which prevents them from making the proteins they need for healthy muscles. It is characterized by progressive skeletal muscle weakness, defects in muscle proteins, and the death of muscle cells and tissue. The early common sign known as ‘Gower’s Sign’ is generally seen in children with muscular dystrophy when they try to get up from the ground from sitting to a standing position by grasping and pulling on body parts from knees to hips, walk up their thighs with hands (Werner, 1987) until they are in erect position.

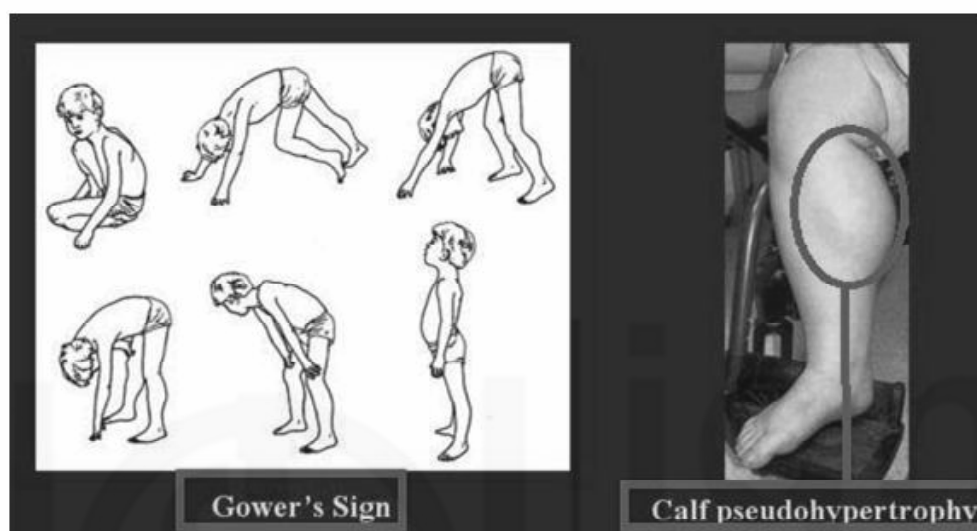


Figure: Progressive weakening and wasting away of muscles in case of muscular dystrophy.

Arthritis is a disease that causes acute inflammation around the joints, its symptoms vary from mild to profound and it can affect children as well as adults. Symptoms accompanied by pain in and around the joints, stiffness of joints, atrophy and joint deformity. The condition may be associated with respiratory and eye problems.



Figure: A child with arthritis receiving physical therapy

There are children with Congenital Talipes Equinovarus (CTEV) or Club foot, Leg-calve-perthes disease, Ostenmyelitis, Arthrogryposis and Osteogenesis imperfect, who face difficulty in moving from one place to another. In **CTEV or Club foot**,

one or both feet turned at wrong angle at the ankle. **Leg-calve-perthes** disease is flattening of the head of the femur or hip joint. Osteomyelitis is bacterial infection of the bone. In **Arthrogryposis**, muscles of the limbs are missing or smaller and weaker than normal. In **Osteogenesis imperfecta**, bones are formed improperly and break very easily. Some of them are severely affected and bedridden, but are very intelligent. If given opportunity, many can learn to do a lot of things for themselves even with their severe disability. Often, they try hard and are eager to learn.



Figure: Club foot



Figure : Leg-calve-perthes disease



Figure: An infant with Leg-calve-perthes disease

Congenital malformation appears in babies born with a defect or malformation of any body part/organ system like congenital dislocation of hip, extremely short/missing limbs, hands and feet directly attached to the torso.

Traffic accidents, domestic accidents, bullet injuries, explosions, sports injuries and natural catastrophes like earthquakes, floods, and landslide are the ways children and youth **acquire disabilities**. The result of these accidents may be neurological, amputation (loss of body parts/limbs) or disfigurement of the body.

Activity I

1. Collect the photographs of children with polio, rickets and muscular dystrophy and make a note on their physical characteristics.
2. Distinguish between congenital malformation and acquired amputation/disfigurement of the body.

Nature and Needs of Children with Locomotor Disabilities

Children with locomotor disability may have following difficulties which restrict their bodily movement as the way other children do:

1. The impaired strength, speed, endurance, coordination and manual dexterity may result in need for medical and therapeutic interventions and require attention for physical accessibility to the environment around including academic tasks such as reading, writing, note taking, test taking and computing and physical participation in group project and activities.
2. Impaired range of motion and control of limbs may result in a need for continuous physical therapy and occupational therapy exercises and require planned intervention for optimum performance in academic tasks and class room activities.
3. Impaired mobility may result in use of aids such as wheelchair, walker, crutches, splints and communication devices. The use of these aids requires all environments be accessible.

Assessment of Children with Locomotor Disabilities

Assessment is a continuous process for understanding the performance of an individual, and to plan the required services for him/her. Assessment in general is a process of collection of information about an individual or a group and taking a decision for that individual or group for future course of action. Collection of Information regarding the individual includes information such as personal history, the past achievement, the environment s/he is living in, the resources available within his reach and current performance in different skills. This information could be collected by techniques such as a) taking personal history, b) administering tests, c) observation of the child, d) interview with the child, parents and caretakers. Information being collected should be analyzed by the team of professionals. Assessment reports must be documented with recommendations for the therapists, teachers and parents/caregivers.

In case of children with locomotor disability, physical/medical assessment should be conducted by trained medical and rehabilitation professionals. They must use standardized assessment tools. The affected muscles, limbs, joints, spine and other body parts, the associated deformity and contracture and other problems, are required to be assessed thoroughly by the respective medical professionals to make the initial diagnosis of the disability and providing interventions. A neurologist may be needed for the management of the neurological conditions, whereas for problems in muscles, joints and spine orthopedics, physical medicine and rehabilitation specialist must be consulted. Therapists' like physiotherapists, occupational therapists and speech and language therapist are essential for assessment and management of physical and speech and language related problems. For a better link between the family and the professionals, role of a social worker is also essential. Initial case history taking and serving as a 'case manager' is the main work of a social worker. He/she also helps the community to know the concessions and benefits for children with locomotor disabilities and their family, given time to time by the Central as well as the State governments and takes an active part in creating awareness. For adolescents in their later years and adults, vocational instructor takes the role of case coordinator.

Intervention

Medical management and corrective surgery are required if a child has contracture and deformities. Then s/he needs corrective surgery for reducing/removing contracture and deformities.

Physical Therapy: This is meant for enhancing motor skills. It is used to strengthen underlying muscles, and teach proper or functional motor patterns. Physical management should include gentle mobilization of affected joints and restore physical abilities, mobility, sensory loss and to ensure bowel and bladder control. Some of the physiotherapeutic exercises may include passive movements of affected limbs, active movements, passive stretching of affected muscles, joints to prevent contractures.

Occupational Therapy: Occupational therapy is for developing fine motor skills and daily living activities, primarily focusing on the hands and arms. These therapists can also guide in feeding techniques and adaptations (self-feeding or otherwise) and for mobility using wheelchair too. Providing and teaching simple exercises and positioning for functional activities are the utmost important tasks of the occupational therapists.

Prosthetics and Orthotics: Prosthetics and orthotics services assist in correct fittings of calipers, shoes or splints and correct mobility aids. It also describes the method of practice of how and when to use them.

Prosthetics implies the science dealing with artificial replacement of the lost body part either congenitally or due to amputation which includes total limbs, fingers, partial hand, partial foot, eyes, nose, ear, breast and so on. Whereas Orthotics implies the science dealing with mechanical correction of orthopedic deformities, realignment, redirection of lines of force action in the body, support of weak parts, prevention of unwanted movement, relieving weight borne by certain body parts, and so on.



Figure: Prosthetics and orthotics engineers making artificial limb

Speech and language therapy

Speech and language therapy is used for improving spoken and alternative communication. Some speech therapists have additional training as oral motor specialists, and these can help with more serious issues with feeding, breathing, swallowing, and oral sensitivity, breathing tasks, developing the use of rhythm to help gain greater control over problems like restricted or involuntary movements.

Access and a Barrier-Free Environment

As a mandatory requirement of barrier free school environment after implementation of Right to Education Act, 2009 and to ensure such barrier free environment for children with locomotor disability, especially for children who use a wheelchair, who use a rollator, tricycle, a walker, crutches or walking sticks, we must ensure their access for getting in and out of the school, getting on and off transportation (ramp, seat belts), moving within the school and in different class rooms, going to toilet and play ground, eating and drinking comfortably and providing furniture as per their requirement. It is also essential to create a supportive environment in the school by changing attitude of other children, teachers and other staff who are in contact with the children with locomotor disability.

Wheel Chairs



Figure: Wheelchair



Figure: Tricycle



Figure: Rollator



Figure: Kaye Walker



Figure: Walker



Figure: Different types of crutches



Figure: Ramps with handrails



Figure: Indication of the entrance of the classroom
and junction point with dot-embossed tiles

The school can make a team of teachers, therapists, resource teachers, civil work personnel and the members of school management committee to ensure to make the school accessible and barrier free. The team will ensure building of ramps in the school with suitable gradients, providing suitable graded steps with convenient handrails in the corridors, clearly marked passageways to assist in continuous movement, wide doors and enough space inside the bathroom for easy access for wheelchair users, enough space in the classrooms for their mobility, suitable heights of the installed electric switches and other equipment, suitable heights of the furniture in library, laboratory, dining place and so on. There are clearly laid down guidelines for these by the office of the Chief Commissioner of Disabilities and it should be strictly followed while constructing these support systems. It should be ensured that unobstructed flooring including slip resistant corridors and an accessible playground and other recreational areas for all children who are using assistive devices and providing appropriate furniture for individual child are made available.

Activity II

A. Match the followings:

A

B

1. Preparing assistive devices

A. Prosthetics

2. Preparing artificial limbs

B. Physical therapy

3. facilitating accessibility to
children with locomotor disability

C. Occupational therapy

- | | |
|--|-----------------------------|
| 4. Developing and strengthening mainly the gross motor skills | D. Barrier Free Environment |
| 5. Developing and strengthening mainly the fine motor skills and activities of daily activities | E. Orthotics |
| B. Make a survey of your locality to find out 2-3 children with different locomotor disabilities. Visit their school(s) and study their individual case file. Assess the present level of functioning of each child and prepare intervention plan. | |

4.3 MULTIPLE DISABILITIES: NATURE, NEEDS, ASSESSMENT AND INTERVENTION

Multiple Disabilities(MD) refers to more than one of the specified disabilities in the Rights of Persons with Disabilities Act, 2016 including deaf blindness. The combination of disabilities and degree of severity is different in each child. The time at which the disability occurs in the child, what is known as the ‘age of onset’, may also range from birth through the developmental period. Sometimes children are born with one disability but acquire the second or third disabling conditions during childhood. The characteristics and the needs of the children depend on the nature of combination of the disabilities, the age of onset and the opportunities that have been available to a child in his environment. We can say that just as every child is different, every child with MD is different.

As per the census of India, 2011 data, 7.9 percent of the total disabled population is individuals with multiple disabilities. The percentage of children having severe multiple disabilities is very low. Approximately 0.1 to 1 percent of the general school-age population and approximately 2 percent of the total population of school age children have severe and multiple disabilities.

Types of Multiple Disabilities

Multiple Disabilities vary in nature and hence the needs of such children too will vary. Children with multiple disabilities will have a combination of various disabilities that may include speech, physical mobility, intellectual, visual, hearing, brain injury and possibly others. There are many educational implications for these children. We will discuss some of the commonly found multiple disabilities among children and their educational implications.

Cerebral Palsy (CP)

Cerebral palsy is considered as one of the locomotor disabilities. However, children with cerebral palsy face a combined effect resulting in challenges in various activities such as communication, mobility, performance of day-to-day tasks, participation in academic activities. Some of the children with cerebral palsy have sensory disabilities also like visual disability and hearing disability. So, due to a combination of such problems and disabilities, although disability in mobility is the hallmark of cerebral palsy, it is being discussed here along with other multiple disabilities for better understanding.

“Cerebral” means brain. “Palsy” means a disorder of movement. ‘Cerebral palsy’ refers to a group of non- progressive neurological conditions affecting body movements and muscle coordination, caused by damage to one or more specific

areas of the brain, usually occurring before, during or shortly after birth. It occurs in about 2 in 1000 live births. As mentioned earlier, children with cerebral palsy have problems in mobility. Some children may also have associated problems such as intellectual disability, hearing, visual, language and communication. The severity of disability varies from person to person.



Figure: A child with cerebral palsy in a classroom with other children and caregivers

Types of Cerebral Palsy

Cerebral Palsy can be divided into various types according to the site of the brain lesion. Spastic is due to the lesion in the motor area in cerebral cortex. This area is called the motor cortex, if it is damaged, movements tend to become stiff and often slow. This is known as spasticity. Athetoid is due to the lesion in the basal ganglia in midbrain. The area, deep in the brain is called the basal ganglia. If it is damaged, movements are jerky and uncontrolled. This is known as athetosis. Ataxia is due to the lesion in the cerebellum. If it is damaged; movements are uncoordinated and may be shaky. Mixed type is a combination of many of these.

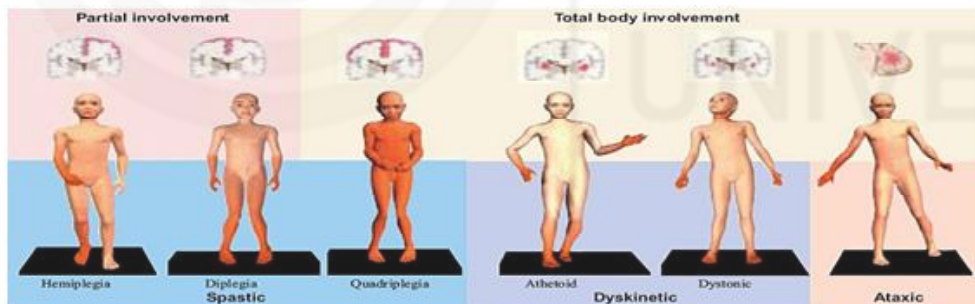


Figure: Types of cerebral Palsy

Based on involvement of limbs, CP can further be categorised as hemiplegia, if one half of the body is affected; diplegia, if involvement of the whole body but the lower half are more affected and quadriplegia, if all the four limbs and body are equally affected.

Activity III

1. Match the followings:

A

B

- | | |
|---|---------------|
| 1. Involuntary movement in the body parts | A. Diplegia |
| 2. Uncoordinated movement in the body parts | B. Spasticity |
| 3. Rigid movement in the body parts | C. Hemiplegia |

4. Restricted movement in more in one half of the body	D. Athetosis
5. Restricted movement in more in lower half of the body	E. Ataxia

Deaf Blindness

Deaf blindness refers to a condition in which people may have a combination of hearing and visual impairment causing severe communication, developmental, and educational problems (RPWD Act, 2016). Deaf blindness may include moderate to profound hearing and significant visual impairments; moderate to profound hearing and significant visual impairments and other significant disabilities; central processing problems of vision and hearing; and progressive sensory impairments/ significant visual impairment; and possible loss of auditory processing mechanisms (associated with severe physical disability or severe cognitive disability) and severe communication delay.



Figure: A student with deaf blindness using Braille

Types of Deaf Blindness

Some people with deaf blindness have no sight or hearing. Other people who are Deaf blind may have varying degrees of vision and/or hearing. Congenital deaf blindness and acquired deaf blindness are the two types of deaf blindness considered based on age of onset of the disabilities. Congenital deaf blindness is a term used when people are born Deaf blind or when their combined hearing and vision impairment occurs before spoken, signed or other visual forms of language and communication have developed. Congenital deaf blindness occurs because of hereditary & genetic conditions, infection contracted by the mother during her pregnancy, or disease, infection or injury that affects a child early in their development. Some people become deaf blind later in life and this is called acquired deaf blindness. People who are born Deaf or hard of hearing and later experience deteriorating sight, can be categorized under acquired deaf blindness. Usher Syndrome for example, causes deafness or hearing impairment at birth and vision impairment later in life. Some people acquire deaf blindness, who is born vision impaired or blind and

go on to experience hearing loss at a later stage. They are born with vision and hearing that deteriorates at a later stage in their life because of accident, injury or disease and they acquire deaf blindness. The ageing process is also one of the causes of dual sensory loss or deaf blindness.

Deaf blindness affects a person's ability to access information, to communicate and socialize, leading to feelings of isolation. A person may experience low self-esteem, lacking confidence to move about independently and to carry out daily tasks. However, the impact that deaf blindness has on a person varies according to the cause, age of onset, and the skills a person has in using their residual sight and hearing. Experiences and understanding of the world around will be different depending on whether a person was born Deaf blind or acquired vision and hearing loss through deterioration of these senses later in life. The impact on a person who has a severe vision and hearing impairment can be complex.

Activity IV

1. Make a visit to your nearby district Sarva Siksha Abhiyan (SSA) office or Block Resource Centre and collect data of children with deaf blindness, autism and intellectual disability studying in school's closer to your own residence. Visit their schools and observe/interact with children and prepare a behavioural profile of such children.

Assessment of Children with Multiple Disabilities

Assessment is an on-going process to find out the abilities and progress of an individual in different areas of development. It is a systematic way of gathering information about a child's qualities, characteristics, behaviours and the environment to aid in teaching.

Clinical assessment conducted by medical professionals, are used to determine the nature, cause and potential effects of a patient's injury, illness, or wellness. This allows the professionals to compile the best possible treatment options for their patients based on numerous physical, mental and medical factors. Current neurological or medical information is very important when a child is experiencing frequent seizures or medication for such medical problems.

Functional needs assessment is an informal way of collecting information about a child regarding how he/she functions and can be done through observation, interviews or questionnaires. The various areas of functional assessment are motor (fine motor and gross motor), self-help skills (toileting, brushing, bathing, drinking, eating and grooming), communication (expressive and receptive), socialization (at home and community), cognitive (thinking, reasoning, problem solving, memory, functional literacy), orientation and mobility (indoor and outdoor), sensory (vision, hearing, touch, taste, smell), pre-vocational / vocational areas. Medical and Educational records including the results of previous assessment, need to be reviewed.

Intervention

After assessment of children with MD, multidisciplinary services are required based on the needs. Children with MD may require audiology services for evaluation of hearing ability, hearing aids fitting and auditory and speech training. He/she need counselling services related to assessment, diagnosis, educational and rehabilitation plan and follow up procedures. Early identification and assessment of disabilities in children with MD are very important for early start for intervention for prevention of secondary problems and to intervene to reduce the developmental lags. If the child

with MD has medical problems like epilepsy, contracture or deformity. He/she may require immediate medical attention for medication or corrective surgery. Children with MD having difficulties related to mobility, like in case of CP and blindness, they require occupational therapy, orientation and mobility services and physical therapy. Parent counselling and psychological services are required by the parents and family members for better acceptance of the child as well as for implementation of intervention plan. The child may also require psychological services, recreational activities and other rehabilitation services like school health services, social work services in schools, speech-language pathology services and transportation to function independently in home, school and neighbourhood environment.

Occupational Therapy is concerned with analyzing the child's ability to perform in everyday contexts. Goals of occupational therapy intervention with children are to improve performance components, enhance performance of functional activities, modify performance context, prevent disability and social role dysfunction, increase self-esteem and self-actualization and to promote positive interactions and relationships.



Figure: A child receiving occupational therapy

Physiotherapy assists the child in improving position, movement, strength, balance and control of body.



Figure: A child receiving physiotherapy

Aids and Appliances

Children with MD require several types of aids and appliances, assistive devices

and assistive technology for their independent functioning like for mobility, communication, education, vocation or for performing day to day activities.

Orthotics designs calipers and splints for children with MD who have associated locomotor disability. An orthosis is a mechanical device fitted to the body to maintain it in an anatomical or functional position. The main purposes of orthosis are to support a painful joint, immobilize for healing, protect tissues, provide stability, restrict unwanted motion, restore mobility, substitute for weak or absent muscles, prevent contractures and modify muscles tone.

Lower limb orthoses are called as *calipers*. In foot orthosis, modifications made in the foot wear. Usual modifications are medial arch support for a flat foot and heel elevation for limb length discrepancy.



Figure: Ankle- Foot Orthosis



Figure: Knee- Ankle- Foot Orthosis



Figure: Hip- Knee- Ankle- Foot Orthosis

Splints are upper limb orthosis. Children who have deformities, sustained abnormal posturing, increased tone, limited movement of the hand and/or limitations in functional skills secondary to problems with hand functions benefit a lot by using splints. Splints can be static or dynamic. *Static splints* have no moving parts, prevent motion and are used to rest or rigidly support the splinted part. These are also used to stretch joint contractures progressively. *Dynamic splints* have moving parts to permit, control or restore movement.



Figure: Cock-up splint



Figure: Opponens splint



Figure: Resting hand splint

Assistive Devices

Adapted Furniture includes adapted chair, CP chair, corner stools, lap boards and standing frame in positioning a child with CP.

Mobility aids are appliances used to help people who have difficulty in walking. They enable some of the body weight to be supported by the upper limbs. Selection of a specific type of a mobility device depends on several factors such as the purpose of using the mobility device, the indoor and outdoor environments in which it will be used, the effort required by the individual to use the device, the positioning needs

and its optimal use in functional activities such as eating, transfers, augmentative communication, personal hygiene, and school activities etc. There are different types of mobility devices.

Scooters

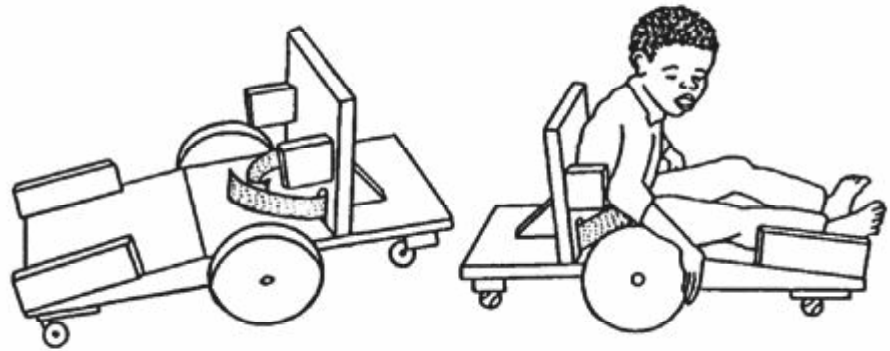


Figure: Scooters

Mobile Stander



Figure: A child using mobile stander

Parallel Bars



Figure: Parallel bars

Special furniture

Children with Loco
Motor, Multiple and
Other Disabling
Conditions

Floor Seat



Figure: A child using floor seat

Box Seat



Figure: Box seat



Figure: Box seat with castors

Potty Chair

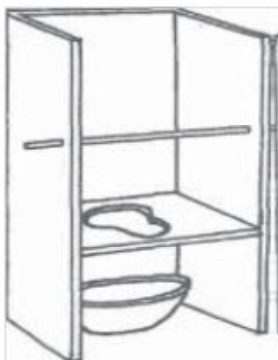


Figure: Potty chair



Figure: A Child using
potty chair



Figure: Mobile potty
chair



Figure: Mobile commode chair with pot

Pommel

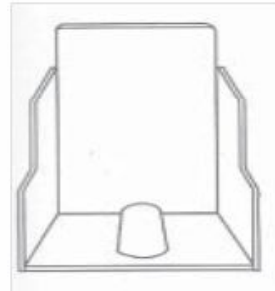


Figure: Chair with pommel

Ramped Seat



Figure: Ramped seat



Figure: A child using ramped seat

Pelvic Strap

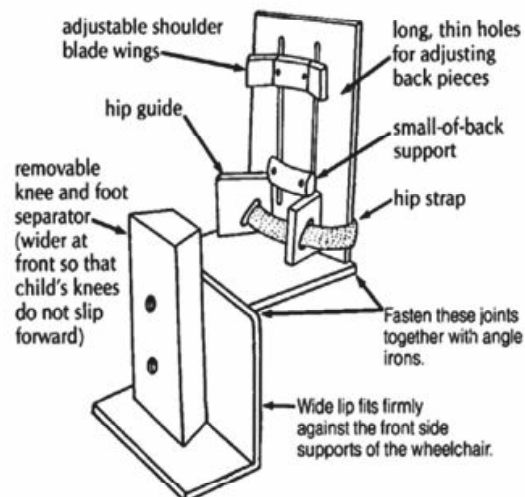


Figure: Special chair with pelvic strap



Figure: Corner chair with strap

Floor Table



Figure: Floor table

Cut-out Tray



Figure: Cut-out tray fitted to wheelchair



Figure: Cut-out tray

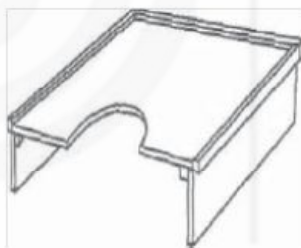


Figure: Cut-out tray on table top



Figure: A child using cut-out tray fitted as table top

Positioning, Handling and Carrying Techniques: Positioning refers to the use of appropriate body positions. Due to abnormal pull of muscles, children with cerebral palsy spend a lot of time in abnormal positions. These abnormal positions can lead to increased tightness and contractures, which may lead to deformities. Contractures and deformities must be avoided wherever possible. Proper positioning should be ensured in all routines throughout the child's day. Proper positioning must be encouraged which should be appropriate to the child's motor development. *Handling* refers to the techniques and methods that are used to move a child or assist a child to move as independently as possible from one position to another. It relates to how the child is picked up, put down, carried, held and so on through movement transitions (e.g.: lying to sitting). Actually, handling is not done only by the therapist's hands, but with his/her entire body. Specific handling, lifting and carrying techniques will vary according to the child's individual needs. Support can be gradually decreased as the child learns to support himself. Carrying techniques are applied while carrying the child or shifting the child from one position to another. Several carrying techniques such as *carry across the teacher's hips* with the child's hips and knees bent and

knees separate and not over the shoulders, *carrying the child facing forwards*, with bent hips and knees and knees separate and *carrying the child using a wheel chair* are the simplest ones and mostly used.



Fig: carrying the child at back



Fig: carrying the child facing forward



Fig: carrying the child using a wheel chair

Positioning a Child with CP in the classroom: When the child does not have adequate head control or trunk control, in prone positioning, the child can be positioned on a wedge, head and neck should be off the wedge (SSA, 2003).



Figure: Prone positioning on wedge

He/she can bear weight on elbows. A roll can be placed between the legs and a small roll can be placed under the chest as well. Positioning a child in prone will help the child to develop head control and some amount of trunk control.

Orientation and Mobility Intervention: Children with deaf blindness, visual and motor disabilities require learning to travel independently with or without using mobility devices. There are many mobility devices that can, when properly used, provide a child with the means for independent, safe, efficient travel. The most commonly recognized mobility device is the long white/red and white cane. Many other mobility devices are also available, including *Electronic Travel Aids (ETAs)*. ETAs are portable devices that emit sonar or laser signals that are reflected to the user during travel, and are converted to auditory and/or tactile signals. The devices are hand held, or chest, head, wheelchair, or cane mounted, and usually serves to provide supplementary information during travel. Individuals using ETAs can learn to interpret information they receive from the device about obstacles that may be in their direct path, about "openings" in hallways, and about drop-offs or inclines in the travel surface. They may also be used to enhance trailing abilities. Mobility devices serve as an "extension" of the user's arm(s), hand(s), and fingers, and provide protection from obstacles while allowing access to needed information about the environment. Sometimes the environment in and around is required to be adapted and modified to allow a child to move more independently rather than just making things easier for him. Hence while adapting or changing the physical environment, ensure that changes

are increasing the child's independence and will benefit all the children in Natural way.

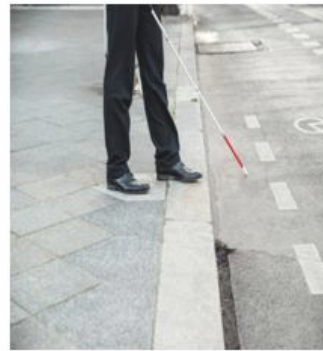


Fig: Red & white folding cane for people with deaf blindness

Fig: Using red & white smart cane

Sensory Integration Therapy: Sensory Integration therapy is the neurological process that organizes sensation from one's own body and from the environment and makes it possible to use the body effectively within the environment. Sensory integration disorders are central nervous system disorders characterized by imbalance among the primary sensations of sight, hearing, touch, taste, smell, vestibular or proprioception. There are several sensory integration activities which can be carried out in school (SSA, 2003). These activities help in increasing muscles tone, reducing muscles tone, balancing, improving writing skills etc. Sensory integration activities such as jumping while sitting on a therapy ball, spinning on a sit- and- spin, jumping on a mini trampoline and pushing down on the top of their heads with their hands help in increasing muscle tone. To reduce muscle tone, activities like slow rocking and rolling, balance activities, weight shifting activities, weight shifting in half-kneeling, shifting from side- sitting to kneeling with hands on hips, smooth, repetitive, alternating movements may be incorporated during free play sessions or any other outdoor activities. Some activities like animal walks such as crab walks, bear walks, duck walk, push-ups on the floor or against the wall, resistive exercises with elastic tubing, weight bearing on the upper limb, cleaning chalkboards and table tops help in bringing stability. Hand muscles can be improved through activities of prewriting, handwriting and manipulative activities on vertical surfaces, moving writing equipment from the palm to the fingers of the hand, rotating pencil from the writing to the erasing position etc.

Intervention for Teaching Activities of Daily Living : Activities of daily living are "the basic activities we perform for self-care such as eating, bathing, dressing, grooming, personal hygiene, work, homemaking and leisure activities. Accessibility to reach the ADL activities in the school should be provided. Ramps and adaptive toilet facilities in the school should be made compulsory. Proper lighting facilities inside the premises should be provided and there should be a caregiver to provide service during the ADL activities.

Communication Intervention: Children with multiple disabilities face significant challenges in the development of communication skills. These difficulties arise due to the multiple associated conditions. They do not get any information or motivation from the environment around them due to which they tend to be less responsive than their non-disabled peers. As a result, people around them become less responsive.

These children also find it difficult to explore the environment physically and using their senses like vision, hearing etc. Thus, these children become passive and have very limited opportunities to initiate and imitate objects. We as teachers need to enhance the child's communication by adding to the modes or ways he /she communicates. This can be done by using objects, pictures, photographs, or symbols to support or supplement the child's communication. Teachers and parents can seek help from speech therapists in developing communication skills of the child. Most children with deaf blindness or multiple disabilities use different modes for receiving information and different ones for expressing information. Based on the situation modes may be used. However, it is important to remember that no single mode is more important than the other and its use depends entirely on the child's needs and situation.

The different modes of communication used in children with DB/MD are tangible symbols, for example, object cues, associated objects, pictures or photograph sand so on. Children with MD also need a calendar system to help them know about the different events and activities that are going to happen during the day, week or month. For these children, calendar is represented by placing objects or pictures for each of the activities in separate compartments or boxes. A calendar system helps the child to know what is going to happen next. Calendar box can be made of various materials such as wood, small plastic boxes, or shoe boxes attached to one another.



Fig: Calendar box

Source: <http://www.tsbvi.edu/distance/communication/images/calendars/time-piece/daily-1181-web.jpg>

Alternate and Augmentative Communication (AAC)

Alternative and Augmentative Communication attempts to compensate for limited verbal communication skills by integrating symbols, devices, techniques, and strategies to enhance or encourage communication. Alternative and Augmentative communication includes "unaided modes" of communication, such as gestures, signs and facial expressions, or "aided modes" ranging from the low tech-such as drawings and tangible symbols-to the high tech-such as speech-synthesized devices and laptop computers.

Sign Language

Sign language is the most obvious choice of communicative skills that can aid communication and can be very effective in children with dual sensory disabilities. The person with deaf blindness uses tactile sign language to communicate. The person puts his or her hands over the signer's hands to feel the shape, movement and location

of the signs. Some people with deafblindness with restricted but usable vision (e.g., tunnel vision) may follow signs by holding the signer's forearm or wrist and using their eyes to follow the signs visually. This helps them follow the signs more easily. Usually people with blindness or visually impairment who lose their hearing later, or people with deafness or hard of hearing who are depended on their speech reading and do not know how to sign, prefer tactile finger spelling because sometimes sign language can be difficult to learn. The person with deaf blindness may prefer to put his or her hand over the finger speller's hand, or on the signer's palm, or cup his or her hand around the signer's hand. Similarly, people with deaf blindness with little or no usable vision to speech read another person by touch. They put their thumb on the other person's chin, and their fingers on the other person's cheek to feel the vibrations of the person's voice and the movement of their lips. For individuals with autism, the use of visual strategies and schedules has been an invaluable tool for developing communication and helping with understanding. Many individuals on the autism learn and understand more easily when things are presented visually, whether it is an object, photo or line drawing. These visuals can be actual representations or symbols, and can be presented as reminders or to help explain a task. Alternatively, a non-verbal individual can use them to communicate. The Picture Exchange Communication System (PECS) is a type of AAC technique with which individuals with autism learn to communicate using picture cards (Maanum, 2009). Fluent users of PECS can use several pictures to make easily understandable and grammatically correct sentences. PECS begins by teaching an individual to give a picture of a desired item to a "communicative partner", who immediately honors the exchange as a request. The system goes on to teach discrimination of pictures and how to put them together in sentences. Later, individuals are taught to answer questions and to comment.

Assistive Devices to Support Communication

A variety of assistive devices, which include low tech and high-tech devices, are used to help children with severe and multiple disabilities in the classroom. It is very important that the individual has a device that is most suited to them. There is no "one size fits all". Some low tech and no tech devices include signing and gestures, communication books like about me, picture dictionaries, daily and weekly schedules, picture boards, books with pictures, objects and/ or messages, alphabet board, communication boards etc.



Fig: Picture communication board

Fig: Communication book

High tech devices which include computers, head sticks and adaptive switches allow children with MD to communicate effectively with others. Some deaf-blind people use a Screen Braille Communicator (SBC). This is a small, portable device that enables them to communicate with sighted people. The device has a QWERTY keyboard with an LCD display on one side, and an eight-cell Braille display on the

other side. The sighted person types short text on the QWERTY keyboard. The deaf-blind person reads the printed text by placing his or her fingers on the Braille display. He or she then uses the Braille display to type back text. The sighted person can read the text on the LCD display.



Fig: Two people use a screen Braille Communication to chat with each other

Source: http://aadb.org/images/stories/factsheet/communications/screen_braille_lg.jpg

Teenage switch progressions allow children to press a switch to activate activity-based instruction on the computer. Other types of assistive technology include speech synthesizers, speech generating devices, alternative keyboards, pointing systems, talking clocks and calculators, voice recognition software, reading machines, magnification software, phonic ear devices, telecommunication devices and sound magnification systems. In unit-7, such devices are discussed, which can be referred to, for detailed information about such devices.



Fig: Electronic Communication book



Fig: Electronic Speech Generating Device

Intervention for Social Skills Training: A social skill is any skill facilitating interaction and communication with others. Social rules and relations are created, communicated and changed in verbal and nonverbal ways. Interaction, socialization, sharing, use of resources and participation in play activities assist in developing social skills in children. Due to the various limitations as a result of combination of disabilities, children often get deprived of learning different social skills along with their family members, friends, neighbors and others in their community. Being a teacher, we need to create or modify the environment in such a way that children with multiple disabilities get ample opportunity to interact for their day-to-day needs.

Educational Intervention: Children with MD also have the right to education along with all other children. The school should have such resources and facilities where all children receive instruction that fits their individual skill levels and learning styles.

Teachers should work together with special educators to the benefit of all children, share their expertise in planning and implementing strategies and support. The curriculum can be adapted and modified as per the requirement of children. Alternative lessons, materials and activities can be tailored to individual needs and individual educational levels. The school can plan and implement individualized education programme (IEP), which is specifically designed to meet the learning needs of each child and may be integrated and transacted in the general classroom along with all other children. The child with MD studying in regular schools may require support services like therapeutic services, training in plus curricular areas, resource rooms services, special equipment, teaching learning materials, adapted curricular and adapted teaching strategies. Resource support could be given by the resource teachers and therapists working in resource centers. Wherever this option is not feasible, long term and short-term training of regular teachers is undertaken. Intensive in-service teacher education is necessary to sensitize regular teachers on effective classroom management of children with special needs.

Activity V

1. Prepare a resource book of aids and appliances and their utility for children with different disabilities by internet surfing/literature studies.
2. Prepare weekly classroom activity schedule for peer groups of children with multiple disabilities emphasizing upon different scholastic activities of the classrooms.

4.4 OTHER DISABLING CONDITIONS: NATURE, NEEDS, ASSESSMENT AND INTERVENTION

The Rights of Persons with Disability Act, 2016, has included 21 disabilities. We have already discussed some of them in detail. The remaining disabilities include, the acid attack victims, chronic neurological conditions, dwarfism, hemophilia, leprosy cured, mental illness, multiple sclerosis, Parkinson's disease, thalassemia and sickle cell disease. The nature of each of these disabling conditions is specified in the descriptions given below:

Acid Attack Victim means a person disfigured due to violent assaults by throwing of acid or similar corrosive substance.

Chronic neurological condition means a condition that has its origin in some part of person's nervous system lasting for an extended period or marked by frequent recurrence.

Dwarfism means a medical or genetic condition resulting in an adult height of 4 feet 10 inches (147 centimeters) or less.

Hemophilia means an inheritable disease, usually affecting only male but transmitted by women to their male children, characterized by loss or impairment of the normal clotting ability of blood so that a minor wound may result in fatal bleeding.

Leprosy cured person means a person who has been cured of leprosy but is suffering from- (i) loss of sensation in hands or feet as well as loss of sensation and paresis in the eye and eye-lid but with no manifest deformity; (ii) manifest deformity and paresis but having sufficient mobility in their hands and feet to enable them to engage in normal economic activity; (iii) extreme physical deformity as well as advanced age which prevents him or her from undertaking any gainful occupation, and the expression "leprosy cured" shall be construed accordingly.

Mental illness means a substantial disorder of thinking, mood, perception, orientation or memory that grossly impairs judgment, behaviour, capacity to recognize reality or ability to meet the ordinary demands of life, but does not include mental retardation which is a condition of arrested or incomplete development of mind of a person, specially characterized by sub normality of intelligence.

Multiple sclerosis means an inflammatory, nervous system disease in which the myelin sheaths around the axons of nerve cells of the brain and spinal cord are damaged, leading to demyelination and affecting the ability of nerve cells in the brain and spinal cord to communicate with each other.

Parkinson's disease means a progressive disease of the nervous system marked by tremor, muscular rigidity, and slow, imprecise movement, chiefly affecting middle-aged and elderly people associated with degeneration of the basal ganglia of the brain and a deficiency of the neurotransmitter dopamine.

Thalassemia means a group of inherited disorders characterized by reduced or absent amounts of hemoglobin.

Sickle cell disease means a hemolytic disorder characterized by chronic anemia, painful events, and various complications due to associated tissue and organ damage; "hemolytic" refers to the destruction of the cell membrane of red blood cells resulting in the release of hemoglobin.

Needs of Children with Other Disability Conditions

Many needs are identified in children with these disabilities ranging from health and medical interventions, academic, self-care, communication, social, leisure and work etc. Health & safety needs are related to maintenance of one's health in terms of eating, illness, treatment and prevention, basic first aid, basic safety considerations such as following rules and laws etc. Self-care needs include activities involved in eating, drinking, toileting, dressing, hygiene, grooming. Communication needs are activities related to comprehension and expression of information through symbolic behaviours (eg. Spoken word, written word/sign language) or non-symbolic behaviours (eg. facial expression). Academic needs include cognitive abilities and skills related to learning at school that also have direct application in one's life (eg. writing, reading using basic practical math concepts, awareness of the physical environment and one's health and sexuality). Self-direction needs are related to making choices, following schedules, initiation activities appropriate to the setting, completing necessary and required tasks. Leisure needs are related to leisure and recreational interests, self-entertainment, interactional, personal preferences and choices. Home care needs are related to functioning within home, which include clothing care, housekeeping, food preparation and home safety. Social needs are related to social exchanges with other individuals, including initiating interacting and terminating interactions with others, sexuality, responding to pertinent situational cues, recognizing feelings. Needs of community use are training in activities related to the appropriate use of community resources, including travelling in the community, shopping at stores and markets, purchasing or obtaining services (e.g. gas station, worship, doctor, using public transportation) and other public facilities. *Vocational* needs are related to jobs (part or full time) and occupation, earning, work behavior, participation in volunteer activities (AAMR, 1992 and Singh & Singh, 2011).

Assessment of Other Disabling Conditions

Assessment of children with these disabling conditions include physical examination and clinical assessment, educational assessment, nutritional assessment, psychological

assessment, communication skill assessment, functional assessment and assessment for fitting of aids and appliances. These assessment dimensions have already been discussed above in the sections on children with locomotor disabilities and children with multiple disabilities. you can refer the section on assessment for details.

Intervention

The children with disabilities are required a range of intervention programmes which have been discussed in the sections on children with locomotor disabilities and children with multiple disabilities such as medical services, nutritional interventions, therapeutic services, psychological services etc. The challenges lie with inclusion of children with these disabilities in school education. The Rights of Persons with Disabilities Act, 2016 has several provisions to promote inclusive education to the children with disabilities. The Act defines "inclusive education as a system of education wherein students with and without disability learn together and the system of teaching and learning is suitably adapted to meet the learning needs of different types of students with disabilities". These children must be admitted in schools without discrimination and be provided education and opportunities for sports and recreation activities equally with others. The building, campus and various facilities should be made accessible, and reasonable accommodation according to the individual's requirements must be provided. These children may require individualized support for their academic and social development which must be provided in consistent with the goal of full inclusion. The act made it mandatory to ensure that the education to persons who are blind or deaf or both is imparted in the most appropriate languages and modes and means of communication. Teachers should have competency to detect specific learning disabilities in children at the earliest and take suitable pedagogical and other measures to overcome them. They should monitor participation, progress in terms of attainment levels and completion of education in respect of every student with disability. The school should provide transportation facilities to children with disabilities and the attendants of the children with disabilities having high support needs. The act has also emphasized for conducting survey of school going children for identifying children with disabilities. The act articulated to establish adequate number of teacher training institutions, training of teachers and their employment, training of professionals and staff to support inclusive education at all levels of school education. Adequate number of resource centers is required to be established to support educational institutions at all levels of school education. The use of appropriate augmentative and alternative modes are pronounced in this Act including means and formats of communication, Braille and sign language to supplement the use of one's own speech to fulfill the daily communication needs of persons with speech, communication or language disabilities and enables them to participate and contribute to their community and society. Regarding teaching learning materials and assistive devices, the act has provisions to provide books, other learning materials, scholarships and appropriate assistive devices to students with benchmark disabilities (a person with not less than forty per cent. of a specified disability) free of cost up to the age of eighteen years. These children require suitable modifications in the curriculum and examination system to meet their needs. We will discuss them in detail in the following units.

Activity VI

1. Visit a Block Resource Centre run under Sarva Shiksha Abhiyan and prepare a list of activities carried out under intervention programmes for children with different disabilities.

4.5 LET US SUM UP

Locomotor Disability refers to a person's inability to execute distinctive activities associated with movement of self and objects resulting from affliction of musculoskeletal and/or nervous system. The major types of locomotor disabilities are musculoskeletal, congenital malformation, accidents and other chronic disabilities polio, rickets, spina bifida, congenital deformities of hip/s and limb/s, deformities of spine, muscular dystrophy and amputation. Assessment should be conducted by trained medical and rehabilitation professionals. The affected muscles, limbs, joints, spine and other body parts, the associated deformity and contracture and other problems etc. are required to be assessed thoroughly by many medical professionals like neurologist, orthopaedics, physical medicine and rehabilitation specialist etc. in the initial diagnosis of the disability and providing interventions. Therapists like physiotherapists, occupational therapists and speech and language therapists are essential for assessment and management of physical and speech and language related problems. Interventions programmes include medical management and corrective surgery, Physical therapy, Occupational therapy, Prosthesis and orthotics, Speech and language therapy etc. A follow up management programme is very important for periodical review of the therapeutic programmes and support for positioning and mobility of the child.

Multiple Disabilities mean a combination of two or more disabilities. Children with multiple disabilities will have a combination of various disabilities that may include speech, physical mobility, intellectual, visual, hearing, brain injury and possibly others. Children with cerebral palsy, deafblindness, autism spectrum disorders and intellectual disability face a combined effect of different associated disabilities. There are many educational implications for these children. Clinical and functional assessments of children with multiple disabilities are important for identifying the needs of such children for planning of appropriate intervention programmes. Children with MD require multidimensional services like medical attention for medication or corrective surgery, occupational therapy, orientation and mobility services, speech-language pathology services and physical therapy etc. Parent counselling and psychological services are required by the parents and family members for better acceptance of the child as well as for implementation of intervention plan.

Assessment of children with chronic neurological conditions, haemophilia, cured leprosy cured, mental illness, multiple sclerosis, thalassemia and sickle cell disease include physical examination and clinical assessment, educational assessment, nutritional assessment, psychological assessment, communication skill assessment, functional assessment and assessment for fitting of aids and appliances etc. They require a range of intervention programmes such as medical services, nutritional interventions and different therapeutic services. The rehabilitation worker and the teacher work in partnership with the family by aiding and services that help the family to coordinate the intervention programmes and try to realize their full rights to education and rehabilitation.

4.6 UNIT END QUESTIONS

Write Short notes on the followings:

- a) Accessible school environment for children with locomotor disabilities.
- b) Therapeutic interventions for children with cerebral palsy.
- c) Educational intervention programmes in school subject areas for children with deafblindness.

- d) Interventions for social and communication skills for children with autism.
- e) Positioning, lifting, carrying and transferring of a child with severe disability.
- f) Resource room activities for children with intellectual disability.

4.7 ANSWERS TO CHECK YOUR PROGRESS

- 1. Activities for practice
- 2. Congenital malformation appears in babies born with a defect or malformation of any body part/organ system like congenital dislocation of hip, extremely short/missing limbs, hands and feet directly attached to the torso etc.

The acquired amputation/disfigurement of the body may be neurological, amputation (loss of body parts/limbs) or disfigurement of the body caused by traffic accidents, domestic accidents, bullet injuries, explosions, sports injuries and natural catastrophes like earthquakes, floods, and landslide etc.

II. Activities for practice

A. Match the followings:

1-E, 2- A, 3-D, 4-B and 5-C.

III. Activities for practice

A. Match the followings:

1-D, 2-E, 3-B, 4-C and 5-A.

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Image source: google images

