NETAJI SUBHAS OPEN UNIVERSITY

STUDY MATERIAL

PG EDUCATION

PAPER - VIII (E1)
MODULES : 1 & 2

POST GRADUATE EDUCATION

PREFACE

In the curricular structure introduced by this University for students of Post-Graduate degree programme, the opportunity to pursue Post-Graduate course in Subjects introduced by this University is equally available to all learners. Instead of being guided by any presumption about ability level, it would perhaps stand to reason if receptivity of a learner is judged in the course of the learning process. That would be entirely in keeping with the objectives of open education which does not believe in artificial differentiation.

Keeping this in view, study materials of the Post-Graduate level in different subjects are being prepared on the basis of a well laid-out syllabus. The course structure combines the best elements in the approved syllabi of Central and State Universities in respective subjects. It has been so designed as to be upgradable with the addition of new information as well as results of fresh thinking and analyses.

The accepted methodology of distance education has been followed in the preparation of these study materials. Co-operation in every form of experienced scholars is indispensable for a work of this kind. We, therefore, owe an enormous debt of gratitude to everyone whose tireless efforts went into the writing, editing and devising of a proper lay-out of the materials. Practically speaking, their role amounts to an involvement in invisible teaching. For, whoever makes use of these study materials would virtually derive the benefit of learning under their collective care without each being seen by the other.

The more a learner would seriously pursue these study materials the easier it will be for him or her to reach out to larger horizons of a subject. Care has also been taken to make the language lucid and presentation attractive so that may be rated as quality self-learning materials. If anything remains still obscure or difficult to follow, arrangements are there to come to terms with them through the counselling sessions regularly available at the network of study centres set up by the University.

Needless to add, a great part of these efforts is still experimental—in fact, pioneering in certain areas. Naturally, there is every possibility of some lapse or deficiency here and there. However, these do admit of rectification and further improvement in due course. On the whole, therefore, these study materials are expected to evoke wider appreciation the more they receive serious attention of all concerned.

Professor (Dr.) Subha Sankar Sarkar
Vice-Chancellor

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NETAJI SUBHAS OPEN UNIVERSITY

PG Education - VIII (E1)
Modules-1 & 2

Module : 1 ◻ Inclusive Education

Module : 2 ◻ Education of the Differently Abled Children

Module -1

Inclusive Education

Unit - 1 □ Understanding Diversity

Unit - 1.1 □ Concept of Diversity

Structure

1.1.1 Introduction

We live in a world which is plural in its manifestation. In every field and in every place find just diverse ways that people lead their life. The plants, the animals and the human all have their varieties. As if the unseen factor of nature tells that the only singular thing of his world is plurality. Things have been such because to help each other in their existential process. Plants and animals do understand this law of universe though they have lessor existential capacity. But man, being the supreme entity, fails to decipher it. Insteac celebrating diversity, s/he now puts a question mark on it.

In this unit you will know different types of human diversities and how they contribute man's wellbeing. Our discussion of diversity would include only of human diversity establishing Disability as an important element of diversity.

1.1.2 Objectives

After completing the module the learners will be able to

- Understand the concept of diversity and its relevant issues.
- Explain inclusive education & the progression from segregation to diversity in inclusive education.

- Explicate the national & key international policies & frameworks in the realm of inclusive education.
- Enumerate the skills in adapting instructional strategies necessary for mainstream classrooms. o Reflect the inclusive pedagogical practices & its relation to desired teaching.
- Expound strategies for collaborative working and stakeholders support in implementing inclusive education

1.1.3. Concept of Diversity

Diversity refers to *all* of the ways in which people are different. It means understanding the uniqueness of each individual, and recognizing individual difference as a part of the social system. It encompasses acceptance of and respect to differences which are genuine to humanity. The difference can be in the dimensions of race, ethnicity, gender, sexual orientation, socio-economic status, age, physical abilities, religious beliefs, political beliefs, or other ideologies. It is the exploration of these differences in a safe, positive, and nurturing environment. Diversity is about understanding each other and moving beyond simple tolerance to embracing and celebrating the rich dimensions of variety contained within each individual. Wellner (2000) conceptualized diversity as representing a multitude of individual differences and similarities that exist among people. Diversity can encompass many different human characteristics such as race, age, creed, national origin, religion, ethnicity, sexual orientation.

"Diversity" is more than just acknowledging and/or tolerating difference. Diversity is a set of conscious practices that involve:

- Understanding and appreciating interdependence of humanity, cultures, and the natural environment.
- Practicing mutual respect for qualities and experiences that are different from our own.
- Understanding that diversity includes not only ways of being but also ways of knowing;
- Recognizing that personal, cultural and institutionalized discrimination creates and sustains privileges for some while creating and sustaining disadvantages for others;
- Building alliances across differences so that we can work together to eradicate all forms of discrimination.

Diversity includes, therefore, knowing how to relate to those qualities and conditions that are different from our own and outside the groups to which we belong, yet are

present in other individuals and groups. Some common areas of diversity include age, ethnicity, class, gender, physical abilities/qualities, race, and sexual orientation. Besides religious status, gender expression, educational background, geographical location, income, marital status, parental status, and work experiences are widely accepted as issues of diversity. Finally, we acknowledge that categories of difference are not always fixed but also can be fluid, we respect individual rights to self-identification, and we recognize that no one culture is intrinsically superior to another.

1.1.4 Dimensions of Diversity

Gardenswartz & Rowe (1994) described diversity as being like an onion, possessing layers that once peeled away reveals the core. According to Gardenswartz & Rowe (1994) the four layers of diversity are organizational dimensions, external dimensions, internal dimensions, and personality.

The organizational dimensions represents the outer most layer and consists of characters such as management status, union affiliation, work location, seniority, divisional department, work content/field, and functional level classification. The characteristics of diversity associated with this layer are items under the control of the organization in which one works. The people can influence this layer in a limited capacity, because control rests with the organization in which a person works.

The external dimension represents those characteristics that deal with the life choices of an individual. The individual exercises a higher level of control over these characteristic than in the organization dimension. The characteristics in this layer are personal habits, recreational habits, religion, educational background, work experience, appearance, status, marital status, geographic location, and income. Meanwhile, the layer where an individual exercises the least amount of control is the internal dimensions. In the internal dimension of diversity an individual has no control over these characteristics. These characteristics are assigned at birth, such as age, race, ethnicity, gender, and physical ability. Often these characteristics are the sources of prejudice and discrimination.

At the core of the Four Layers of Diversity Model is personality. Personality is described as traits and stable characteristics of an individual that are viewed as determining particular consistencies in the manner in which that person behaves in any given situation and over time (Winstanley, 2006). The personality of an individual is influenced by the other three levels of the model. The other layers help shape the individual's perception, disposition and actions, as the individual interacts with the world around them.

Recently, in the field of special education, another kind of diversity is gaining its colour. It is neuro-diversity. The term, which was coined by Australian autism-activist Judy Singer and American journalist Harvey Blume in the late 1990s, suggests that what we've called in the past "disabilities" ought to be described instead as "differences" or "diversities." Proponents of neuro-diversity encourage us to apply the same attitudes that we have about biodiversity and cultural diversity to an understanding of how different brains are wired. We should celebrate the differences in students who have been labeled "learning disabled," "autistic,"

"ADD/ADHD," "intellectually disabled," "emotionally and behaviorally disordered," or who have been given other neuroiogically based diagnoses. We ought to appreciate these kids for whom they really are and not dwell upon who they have failed to become. (Armstrong, 2013).

Diversity can be natural (nature's plural manifestation) and can also be human. At human level, diversity is a reality created by individuals and groups from a broad spectrum of demographic and philosophical differences. It is extremely important to support and protect diversity because it gives value to individuals and groups and help them free from prejudice. It also fosters the climate where equity and mutual respects are intrinsic.

1.1.5 Diversity Consciousness

Our ability to recognize, understand, and adapt to the differences is called *Diversity Consciousness.* The definition of *consciousness* in the dictionary is 'being fully aware or sensitive to something'. Another way of defining it is the full activity of the mind or senses. Diversity consciousness includes understanding, awareness, and skills in the area of diversity. To have a better understanding, let us discuss the following points.

1. *It is not a simple common* sense—Common sense is not sufficient. We need to educate ourselves and each other.
2. *Only good intention is not enough*—we have heard people say, "If my heart is in the right place, that is enough." Trying extra hard to be fair and respectful of others or having the best of intentions is a good start, but only a start. It is possible to show insensitivity and ignorance even though you mean well. People who talk to adults with disabilities in a childlike manner may think that they are being kind. People who tell you to forget our differences and just "be human" may think they are offering helpful advice. But this is not enough.
3. Not *important for just some of us but for All*—all of us need to be culturally literate and responsive to survive and succeed in the twenty-first century. it is improper to think that someone else's problems or struggles do not affect me. "All of our

ancestors came to this country in different boats. But we're all in the same boat now. And if part of the boat sinks, eventually the rest of it goes down too.

4. *It is not some "feel-good" activity*—Diversity consciousness is not a matter of merely feeling good about ourselves and others. It goes deeper. Superficial acceptance is replaced by a deeper and more critical understanding.

In the field of special education diversity consciousness is quite important. In our country children who are differently able are not only neglected, but also lack this consciousness. Even parents and community members have not sufficient knowledge about this.

1.1.6 Diversity Education

It refers to all the strategies that enable us to develop diversity consciousness. Through diversity education, we develop awareness, understanding, and a variety of skills in the area of diversity. These skills are referred to as **diversity skills.** Among these are flexible thinking, communication, teamwork, and leadership skills, as well as the ability to overcome personal and social barriers. Diversity education takes many forms. It is something we can initiate and control, such as reading a book, volunteering to help others in need, attending a workshop, and exchanging ideas about diversity issues with thousands of people over the Internet.

1.1.7 "Check Your Progress" - 1

1. Define diversity.

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2. Mention the four major levels of diversity.

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3. What is diversity consciousness?

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Unit - 1.2 □ Types of Diversity

Structure

1.2.1 Introduction

When we want to classify diversity, specifically at human level, there are different ways to do it. The most acceptable of all is classifying them as: cultural diversity, gender diversity, linguistic diversity and socio-economic diversity. In fact, at human level these are the major diversity verities which affect human system.

The present unit deals with how different diversities shape human personality and bring changes in our life styles. The unit also shows some light on disability as related to diversity.

1.2.2 Objectives

After *going through the unit content, you would be able to:*

- Know different kinds of diversities and their dimensions
- Understand how they shape and affect human personality
- Conceptualize the role of education in diversity

1.2.3 Cultural Diversity

Culture encompasses the learned traditions and aspects of lifestyle that are shared by members of a society, including their habitual ways of thinking, feeling and behaving. (Frederickson & Cline, 2002). It is that part of life which is learned, shared, and transmitted from one generation to the next. Although culture endures over time, it is not static. Language, values, rules, beliefs, and even the material things we create are all part of one's culture.

Culture's influence on us is profound. As we internalize culture throughout our lives, it influences who we are, what we think, how we behave, and how we evaluate our surroundings. For example, culture shapes the way we communicate, view work, interpret conflict, define and solve problems, and resolve dilemmas. Culture, which Hofstede describes as a collective programming of the rnind that reveals itself in symbols, values, and rituals, is often so embedded in us that we may be unaware of its influence.

Cultural Diversity or Cultural Pluralism is a process through which cultural differences are acknowledged and preserved. For example, the advocates of multicultural education argue that the study of history should be more pluralistic. History should reflect the distinctive cultural experiences of all people. According to this perspective, courses in history often ignore the experiences, perspectives, and contributions of women or people of color or of a particular caste or class. Those who share this opinion argue that history courses are to be truly inclusive.

1.2.3.1 Dimensions of Cultural Diversity

Dimension refers to specific traits which distinguishes one person or group from another. Race, gender, ethnicity, social class, and demography are some of the common dimensions. Race: Race refers to a category of people who are *perceived* as physically distinctive on the basis of certain traits, such as skin color, hair texture, and facial features. Notice that what makes this group distinctive is our perception of differences.

Ethnicity: Ethnicity is a label that reflects perceived membership of, and a sense of belonging to, a distinctive social group. The crucial distinguishing features of an ethnic group vary between different contexts and change over time. They may include physical appearance, first language, religious beliefs and practices, national allegiance, family structure and occupation. A person's ethnic identity may be defined by their own categorization of themselves or by how others see them. *Whereas race relates to physical differences, ethnicity focuses on cultural distinctiveness.* Ethnicity is defined as the consciousness of a cultural heritage shared with other people. In India, for example, the tribals have a distinctive cultural identity.

Gender. It has to do with the cultural differences that distinguish males from females. For instance, in any given culture, people raise males and females, to act in certain ways. This is called gender role. A girl in India is trained to know the culinary skills and manage household work as a gender role prescribed by the society. Do not confuse the term *gender* with sex. Sex refers to biological differences, such as hormones and anatomy.

Social class: Another important dimension of cultural diversity is Social class which refers to one's status in society. This is usually determined by a variety of social and economic criteria, including wealth, power, and prestige. Even though social class influences where we work, live, and go to school, its importance is addressed infrequently. It is because the concept of social class is fuzzy and inconsistent. For example, how would we classify the students in our class? *Lower, middle,* and *upper class* mean different things to different people.

Languages'. Languages transmit and preserve culture. Of the estimated 7,000 languages spoken throughout the world, one becomes extinct every two weeks. This shows that one language or a group of languages dominate other languages. In India English language dominates the whole of sub-continent. With it, in a subtle way, the language initiates Indians into the native culture from which it came.

Work/Life Issues; Work schedules are becoming more flexible as mothers and fathers look to balance their careers with child-raising responsibilities. The previous equation of mother as care taker and father as money giver does not hold true for today's generation. This has added variety to the cultural scenario.

Use of Technology: Technology has divided the population of the whole- world into two categories-digital natives and digital immigrants. **Digital natives,** young people who are "native speakers" of the language of computers, video games, and Internet, are learning to adapt to new technologies at a faster rate than those of us who are

digital immigrants; people who were not born into the digital world but learned the language and the new technology later on in life. Cyber-segregation or the **digital divide,** the gap between people with regard to their ability to access and use information and communication technologies

(ICTs), threatens to widen the gap between the "haves" and "have-nots". This has also brought change in cultural sphere.

Surnames: Data from different sources show that the most common surnames in India have changed in recent times. The age old tradition of inhering husband's surname is first changing, Women are either upholding their parental surnames or adding their husbands' surname with it without erasing it. This has created a new way of identity for the girls.

Demographic changes: With the development of communication and transport system man has become hyper mobile. In search of jobs and settlement there is constant changing of stay-house. This demands, very often, an adaptation to new culture, new language, new living pattern and many more things. For example, the cultural diversity of Kolkata is due to its capacity to provide bread and blanket to a large number of people, of which a significant portion is from outside Bengal. This has created a unique culture for Kolkata.

Globalization: Globalization, the growing interdependence of people and cultures, has accelerated in the twenty-first century. Globalization is impacting individuals of every conceivable color and culture. To use Friedman's terminology, the world is being flattened in all kinds of ways. Factors such as immigration, the speed and ease of modern transportation, outsourcing, environmental changes, and the globalization of markets and technology contribute to this trend.

1.2.3.2 Disability and Cultural Diversity

Disabled children and perception about them greatly differ across cultures. The following reactions are experienced by families with disabled children across **all societies and cultures,** but may be more strongly embedded and reinforced in some cultural groups:

- Commonly there is an initial period of **denial** by the family that the disability exists, sometimes resulting in negative implications for the immediate care needs of the child. This result is reinforced by community expectations that the family will function in the same way as before the child with disability was born and also by the absence of community care structures to assist the family.

- The second theme of **blame** or 'cause attribution1 is based on the belief that someone or something has 'caused' the disability. This view can commonly focus on the actions of the mother during pregnancy who is blamed for giving birth to a child who has a 'defect'. Thus, it can be seen as an attempt to explain the presence of the disability due to some form of fault attributed to the mother, or a physical event during pregnancy or early childhood. This feature is also commonly used to provide explanations for somewhat common 'imperfections' in children, such as birthmarks etc. In some cases, the birth of a disabled child may be considered as a 'punishment from God' that the family 'deserved'.
- Some families are **ashamed** of their children with disabilities who they hide away in their homes. In some countries, it is not unusual to hear of cases of disabled children who have been abandoned. Social services in these places are often non-existent and education and health systems do not cater for children with disabilities. In other cases, children with intellectual disabilities and hearing or visual impairments do not attend school because they would be mocked and humiliated I ated by other students.
- In the longer term, both children with disabilities and their family carers can experience **isolation** and marginalization from other families within their community. Eventually, these factors may result in marital breakdown, with the mother commonly staying with the disabled child in reduced economic circumstances. The result for the mothers and children is further social alienation and loneliness.
- **Stigma** attached to disability can sometimes mean that the social status and marriage prospects of other children in the family are also reduced. In some societies, this stigma can also jeopardize the marriage prospects of the sisters of a woman with a disabled child.
- In other situations, family members may **overprotect** disabled children, and have **low expectations** for their development, with the result that disabled children remain overly dependent on others. Even for children from loving homes, a **lack of knowledge and belief in the capacities of disabled people,** combined with guilt and lack of external support structures can result in restricted outcomes for children with disabilities.

1.2.4 Gender Diversity

Gender diversity is a term referring to how people from different gender are represented

in their relevant setting. Primarily, this term is often used to refer to the distribution of females and males in social, educational and work life. Now-a-days it also includes those who fall into non-binary categories of gender, for example, the LGBTs. Gender diversity is a part of cultural diversity, but-due to its individual significance this is dealt separately.

Gender Diversity is the variety in the representation of different sexes of people in different social setting. Some works or activities are predominantly performed by one category which results in the over representation of that category and under representation of the other. For example, in Indian context, we can say, the women are underrepresented in outside works. But we find their over representation in household work. There are exceptions also. In Karnataka, we find women being engaged in large numbers in public transport systems like, bus and truck. This is not found elsewhere in India. Similarly, in engineering section there is less involvement of women till now. Works of mines and defense, which require hazards and adversity, are abandoned by the women.

While some societies have better defined gender roles, others have fluidity in their gender roles. The GLOBE study of national culture describes this as gender egalitarianism, defined as 'the degree to which an organization or society minimizes gender role differences while promoting gender equality' (House, Hanges, Javidan, Dorfman, Gupta, 2004, p. 12). Countries typically ranking high on gender egalitarianism are Hungary, Russia and Poland, while those lowest on this scale are South Korea, Kuwait and Egypt (House et al., 2004, p. 365). It is expected that more gender egalitarian societies will have similar opportunities in the workplace for both men and women, as gender is not a substantial element in considering a person's capabilities or suitability (Farndale, Biron, Briscoe and Raghuram, 2015 p.680). Roles in the home and at work are also more equally divided between the sexes in these societies, enabling more equal workplace participation (Aycan, 2008). A similar argument is relevant to understanding the implications of gender empowerment: a specific measure of gender egalitarianism referring to the extent to which, in a given society, both women and men are able to participate in decision-making regarding economic and political life (Klasen, 2006).

Gender egalitarianism does not always mean inclusion of women in the mainstream workforce. Now-a-days we find male persons being engaged in cooking which is traditionally

a job of the females. It also demands men to perform those activities which were traditionally done by women.

Excepting some developed countries we find gender stereotyping and gender bias in many countries of the world. People have still the feeling that women are biologically inferior to that of men. This tells the fact that women can do simple and smooth-going works and are not fit for the so called 'tight-works'.

1.2.4.1 Gender Diversity and Disability

If spoken in terms of disability we would find great difference in gender variance. Disabled males are taken care of but disabled females remain neglected. As far as gender identity in disability is concerned women are more likely to describe themselves in terms of gender than men and this particularly true amongst women from minority ethnic groups.

Sexuality formed a key component of personal identity for lesbian and gay people, with only a few exceptions.

Varied childhood experiences cause great difference in gender disability. Studies found that 'over protectiveness' caused greater harm to the gender roles of children, particularly among females. The South Asian females are worst affected by this.

1.2.5 Linguistic Diversity

Linguistic diversity is concerned with the availability and practice of multiple languages in public and private life. The countries where people of different languages inhabit and can speak their language freely is said to have linguistic diversity. India is such a country where a large number of languages (nearly 350) are practiced. Some languages are constitutionally accepted and some more are spoken by large number of people, though they do not have official acceptability. Besides, there are many dialects which do not have written script but are transacted orally. So to have a common platform for communication both Hindi and English are accepted as *lingua franca* (the language of communication for all). Both of these languages are accepted as language of administration, legislation and English as the language of judiciary.

Language is one of the most interesting affirmations of our diversity. An Indian young boy in Delhi used to speak Malayalam to his mother, English to his father, Hindi to the driver, Bengali to the domestic help and Sanskrit to God. The Indian Rupee has 18 languages in it.

The Constitution of India recognizes 23 languages today, but in fact there are 35 Indian languages that are each spoken by more than a million people - and these are languages with their own scripts, grammatical structures and cultural assumptions, not just dialects (and if we're to count dialects, there are more than 22,000).

There are five language families in India-Andamanese, Austro-asiatic, Dravidian, Indo-Aryan and Tibeto-Burman. The majority of Indian languages belong to Indo-Aryan and Dravidian families. The former is spoken by 70% of people and the later by 22%. The rest are Austro-Asian and Tibeto-Burman.

1.2.5.1 Linguistic Diversity and Disability

Five percent of all school-age children have a learning disability. Over half of all students with a learning disability have a language-based learning disability, many with challenges in reading errors or limited skills in vocabulary, skills are delayed in comparison to peers from the same language group who have been learning for the same length of time. Their communication is impaired in interactions with family members and others who speak the same language. The language they speak will have limited, inappropriate, or confused in content, form, or use. Sometimes it may so happen that the child will be unable to discriminate between language acquisition and language disorder.

The following findings may be given for better understanding about the status of language development among disabled children:

- The child has difficulty in developing literacy skills in the native language (assuming adequate instruction in the native language).
- There is a family history of reading difficulties in parents, siblings, or other close relatives (again, assuming adequate opportunity to learn to read).
- The child has specific language weaknesses, such as poor phonemic awareness, in the native language as well as in other languages. (However, these difficulties may manifest somewhat differently in different languages, depending on the nature of the written language; for example, Spanish is a more transparent language than English, so children with phonological weaknesses may decode words more accurately in Spanish than in English.)
- The child when exposed to research-based, high-quality reading intervention does not make adequate progress relative to other.

1.2.6. Socio-economic Diversity

Socio-Economic diversity includes a wide range of variables that create difference in a society or between societies. These are: age, race, sex, economic background, geography, religion, philosophy, personal and professional background etc. Diversity of experiences, viewpoints, Ideas and thoughts also comes under this. For example, diversity in a school includes a group of pupils from different backgrounds (this can be many things not just racial, but students with different skills and career interests and hobbies and of different political views). We can have the following features for socio-economic diversity:

- In a particular geographic area, mainly four kinds of diversity are considered-age, gender, ethnicity and background
- The presence of, participation by, and respect for differing viewpoints, opinions, cultures, contexts, and approaches
- Wide array of people that come from different backgrounds, lifestyles, social experiences, races, and religions
- The immersion and comprehensive integration of various cultures, experiences, and people
- Having people of different ideologies, genders, economic backgrounds, races, ethnicities, age, and professional/academic background
- It has variations in background factors: ethnic, culture, education, interests.
- Heterogeneity in human qualities among a group
- The inclusion of people from all different types of backgrounds and co-existence of people of different color, religion, culture, language, etc
- Different people, different views on life, different life experiences and backgrounds both ethnic and personal that help shape who a person is

1.2.6.1 Socio-Economic Diversity and Disability

Socio Economic Status, i.e., SES affects overall human functioning, including our physical and mental health. Low SES and its correlates, such as lower education, poverty and poor health, ultimately affect our society as a whole. Inequities in wealth distribution, resource distribution and quality of life are increasing globally. Lower levels of SES have consistently been correlated with poor health and lower quality of life. The existence of a disability can be the source of emotional maladjustment for individuals and the

families responsible for their care. Individuals with a disability and their families are at increased risk for poor health and quality-of-life outcomes when their disability status affects their socioeconomic standing.

Research on disability and health care suggests that individuals with a disability experience increased barriers to obtaining health care as a result of accessibility concerns, such as transportation, problems with communication, and insurance.

Persons with a disability are likely to have limited opportunities to earn income and often have increased medical expenses. Disabilities among children and adults may affect the socioeconomic standing of entire families. Research suggests that there exists causal relationship between low SES and the development of disability. These barriers contribute to discrepancies in wealth and socioeconomic opportunities for persons with a disability and their families.

Studies have found that children with disability have less percentage of higher educational status. Many do not pass high school examinations. Only an average of 5% goes for college education.

1.2.7. Diversity and Disability

The Americans with Disabilities Act (ADA) of 1990 defines a disability as a physical or mental impairment that substantially limits one or more major life activities. A disability is a condition or function judged to be significantly impaired relative to the usual standard of an individual or group. The term is used to refer to individual functioning, including physical impairment, sensory impairment, cognitive impairment, intellectual impairment mental illness, and various types of chronic disease.

Disability is conceptualized as being a multidimensional experience for the person involved. There may be effects on organs or body parts and there may be effects on a person's participation in areas of life. Correspondingly, three dimensions of disability are recognized: body structure and function (and impairment thereof), activity (and activity restrictions) and participation (and participation restrictions). The classification also recognizes the role of physical and social environmental factors in affecting disability outcomes.

1.2.7.1 Types of Disability

We can find the following kinds of disability now-a-days:

a) *Mobility and Physical Impairments*

This category of disability includes people with varying types of physical disabilities including:

- Upper limb(s) disability
- Lower limb(s) disability
- Manual dexterity
- Disability in co-ordination with different organs of the body

Disability in mobility can be either an in-born or acquired with age problem. It could also be the effect of a disease. People who have a broken bone also fall into this category of disability.

b) *Spinal Cord Disability:*

Spinal cord injury (SCI) can sometimes lead to lifelong disabilities. This kind of injury mostly occurs due to severe accidents. The injury can be either complete or incomplete. In an incomplete injury the messages conveyed by the spinal cord is not completely lost. But a complete injury results in a total dys-functioning of the sensory organs. In some cases spinal cord disability can be a birth defect.

c) Head Injuries - Brain Disability

A disability in the brain occurs due to a brain injury. The magnitude of the brain injury can range from mild to moderate and severe. There are two types of brain injuries:

- Acquired Brain Injury (ABI)
- Traumatic Brain Injury (TBI)

ABI is not a hereditary type defect but is the degeneration that occurs after birth.The causes of such cases of injury are many and are mainly because of external forces applied to the body parts. TBI results in emotional dysfunctioning and behavioral disturbance.

d) Vision Disability

There are hundreds of thousands of people who suffer from minor to various serious vision disability or impairments. These injuries can also result into some serious problems or diseases like blindness and ocular trauma, to name a few. Some of the common vision impairment includes scratched cornea, scratches on the sclera, diabetes related eye conditions, dry eyes and corneal graft.

e) Hearing Disability

Hearing disabilities includes people that are completely or partially deaf, (Deaf is the politically correct term for a person with hearing impairment).

People who are partially deaf can often use hearing aids to assist their hearing. Deafness can be evident at birth or occur later in life from several biologic causes, for example Meningitis can damage the auditory nerve or the cochlea.

Deaf people use sign language as a means of communication. Hundreds of sign languages are in use around the world. In linguistic terms, sign languages are as rich and complex as any oral language, despite the common misconception that they are not "real languages".

f) Psychological Disorders

1. Affective Disorders: Disorders of mood or feeling states either short or long term.
2. Mental Health Impairment is the term used to describe people who have experienced psychiatric problems or illness such as;

- Personality Disorders - Defined as deeply inadequate patterns of behavior and thought of sufficient severity to cause significant impairment to day-to-day activities.
- Schizophrenia: A mental disorder characterized by disturbances of thinking, mood, and behavior.

g) Learning Disability

A learning disability can be caused by brain injury or medical condition. Children who suffer from a specific learning disability may find it difficult to read and write. Solving simple arithmetic problems can also difficult for a child with any of the types of learning disabilities that exist. Studies and research show that almost 30 percent of the general population suffers from one kind of learning disability or another. Let's look at the five most common types of learning disabilities.

1) Dysgraphia

Children with dysgraphia may be unable to differentiate between words so writing can be difficult. In most of the cases, the child also finds it difficult to understand different sounds and words which are spoken. Some of the common symptoms of dysgraphia are:

- Even if the child is provided with high quality education, he or she finds difficulty in writing words and numbers when they have this specific learning disability.

- Some children affected with dysgraphia find it difficult to process the language.
- The handwriting of dysgraphia-affected children is also very difficult to interpret.
- Typically, dysgraphia-affected children have problems with spelling and they mix up the alphabet.

2) Nonverbal Learning Disability

It may be hard to identify children who are affected by nonverbal learning disability or NLD at an early age. It is only when they enter higher grades that they begin to face problems, especially in social matters. Symptoms of this include:

- Degraded abstract reasoning.
- The nonverbal learning disability affected child develops a fear of facing new situations.
- The affected child also lacks good common sense.
- Subjects like math and English are the most difficult subjects for the child who is affected with nonverbal learning disability.
- The nonverbal learning disability affected child has very low self-esteem which consequently creates social problems.
- The ability to think clearly and the reasoning power of the child declines.

3) Dyscalculia

Dyscalculia is a specific learning disability which causes difficulties in understanding basic math principles and solving simple problems. The dyscalculia-affected child finds it hard to interpret mathematical symbols and numbers. Even simple arithmetic problems are difficult for him or her to solve.

Some Common Symptoms of Dyscalculia are-

- The dyscalculia-affected child finds it difficult to judge time and distance.
- The dyscalculia-affected child also finds it difficult to differentiate between directions. Mental visualizations are hard for the child.
- Simple calculations in the mind are hard to render for a dyscalculia-affected child.

4) Memory Disabilities

People who are affected by memory disabilities may find it really difficult to memorize things. Memory disabilities are just some of the types of learning disabilities that affect

memorization. For instance, the person with a particular mental disability may forget a sentence spoken by someone two minutes ago. Those who suffer from this disability show

- Difficulty in remembering even simple things like the name of the person whom he/she just met.
- Difficulty in solving those types of math problems which require memorizing formulas.

1.2.7.2 Dealing Disability through Education

Schools can assist students with disabilities and their families by working together to change attitudes and reduce the stigma associated with disability. Time, care, respect, patience and persistence are required to change long held attitudes and beliefs.

For most families, accepting and coming to terms with disability is a long and difficult process. Frequently, the first difficulty staff in schools encounter is overcoming parental **denial** of their child's disability. It is not unusual for parents to be reluctant to give their permission for their child to have a psychological assessment. Likewise, there is often a reluctance to accept the findings of psychology reports. The following are some of the ways that schools can help:

- First and foremost, listen to the parents, understand their concerns and build a partnership based on trust. It may take time and continued contact to build a trusting relationship.
- Help the members in providing support services needed for the child.
- Work with relevant experts and interpreters to explain the results in a way that is sensitive to the specific cultural community's beliefs and values.
- Conduct staff professional development sessions on attitudes and perceptions of disability for relevant cultural communities at your school.

Parental attitudes and perceptions of **blame** and **shame** can be modified by support and education. Parents need to be provided with accurate information in a way that is appropriate for their needs. This may include:

- Meeting with the parents of the individual child in a multi-disciplinary team (eg Disability Coordinator, Psychologist, Teacher, Support Worker, Interpreter etc) to listen to the parents' concerns and to provide information about the child's disability, the Negotiated Education Plan (NEP), support options and the future.
- Provision of written materials translated into a language in which they are literate.

Please note that some parents of newly arrived families have not had the opportunity to learn to read, so providing them with written materials in their first language may be of no help.

- Invitations for parents to attend school and / or regional workshops or support groups. Appropriate support structures will need to be in place for some parents to be able to attend such sessions and for the information to be interpreted or explained if necessary.
- Invitations to include a relative or community member to attend meetings with the parent to support them.

Teachers can also make a difference by:

- Building close and supportive relationships with children and their families.
- Teaching all students about disability and sensitively providing students with accurate information and celebrating diversity and ability.
- Providing a safe and supportive learning environment that is free from harassment and responsive to the needs of students with disabilities.
- Modeling respect and valuing diversity through positive attitudes and inclusive language.
- Seeking advice and support from colleagues and experts in the field.
- Challenging discrimination and negative attitudes.
- Including the lives and achievements of exceptional people with disabilities in the curriculum e.g., Stephen Hawking, Sudha Chandran, Stevie Wonder, Ludwig Van Beethoven, Franklin D. Roosevelt, Helen Keller, Paralympic athletes, local heroes etc.
- Providing experiences that promote understanding, for example, hosting a wheelchair sporting event, organizing a *Royal Society for the Blind* Guide Dog visit, or inviting a Paralympic athlete as a guest speaker.

Each and every student with a disability has the right to access a broad and balanced curriculum so that they can reach their full potential and achieve at the highest level possible. Learning programs that are inclusive and supportive will enable students

with disabilities to maximize their achievements. In order for students to achieve their full potential, it is important for teachers to work in partnership with parents and families to build on the strengths of students with disabilities.

1.2.8 "Check Your Progress" - 2

1. Give an example of gender stereo-typing.

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2. What is the basic difference between race and ethnicity?

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3. What is digital divide?

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4. What is Lingua Franca?

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5. What is schizophrenia?

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6. Mention two symptoms of dyscalculia,

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Unit - 1.3 □ Diversity in Learning and Play

Structure

1.1.3.1 Introduction

Diversity is not an affair of matured person. Among children we find it in their preference for playing a particular game or sport and a kind of learning style they prefer to. This is inherent in all societies and among all students. This really makes the learning so comprehensive and play so enjoyable. Let us discuss it in detail.

1.3.2 Objectives

After going through the unit content, you would be able to:

- Know different kinds of learners and the learning style they prefer to
- Understand how diversity is found in play preferences

1.3.3 Diversity in Learning

Diversity is a basic composition in the learning style and play habit of students. Children show ample variety in their learning style and play preferences. Let's discuss these briefly.

Diversity in learning indicates difference in style of learning. Learning style is the typical way of conceptualizing a content matter as a learner goes through the curriculum. Learning styles are most often divided into three basic groups. There are the auditory learners, visual learners and kinesthetic or tactile learners. In addition to these basic groups, some educational theorists also recognize verbal, logical, social and solitary as

additional styles. Here is a systematic breakdown of each learning style and the ways to address these styles in the classroom.

1. Auditory Learners

Auditory learners learn best through hearing the message. Students who are auditory learners respond well to lectures and verbal instructions. They may also be interested in books on tape or listening to review material. Some auditory learners have greater success with oral exams due to the fact that they are able to process verbally, hear the questions, and hear their own responses. Teaching auditory learners requires the teacher to use rhythmic memory aids such as acronyms, short songs, or rhymes. For studying, auditory learners do best when they are able to read their material aloud. Flip cards which can be read aloud may also be useful.

2. *Visual Learners*

Visual learners process information according to what they see and the images they have created in their mind. When teaching visual learners, their seating position should be in the front of the room to help them avoid external visual distractions. Illustrations, diagrams, and charts are very helpful when working with visual learners. Students who are visual learners are often the best note-takers because they need to see the information being presented. Flip cards can be very helpful for visual learners as it isolates an image of the material they are studying.

3. *Kinesthetic Learners*

Kinesthetic, or tactile, learners learn best through touching, feeling and doing. Teachers trying to reach kinesthetic learners should incorporate hands-on projects, multi-media assignments, skits, movement, and physical artifacts as examples. Assigning a diorama or skit is a great example of how to reach a kinesthetic learner. These students also respond well to object lessons if they are able to touch the object involved.

Hands-on experiments are another great tool for teaching kinesthetic learners. This is easily done with science material, but can also be incorporated into social studies and even language and arts. Information about geography, customs, and food can often be reworked into a hands-on experience. Examples of this include mummifying a chicken in association with a social studies unit on ancient Egypt or preparing an ethnic food in conjunction with a culture-based language arts story. These sorts of ideas attract and engage the kinesthetic learners in the classroom.

4. *Logical, Social or Solitary Learners*

Logical learners are those students who most enjoy problem solving, logic games and

reasoning. These students love riddles, word problems, and problem solving games or worksheets, so provide many when teaching them. The categories of social and solitary describe how the students prefer to study, either in groups or individually.

1.3.3.1 Teachers' Role in Determining Students' Learning Style

Teachers should consider ways they can determine the learning styles of their students. This can be a very different process for various age groups. For older students, teachers can use curriculum for teaching learning styles and then offer personality tests specifically designed to help identify their-students' styles. With middle school students, teachers should incorporate a variety of learning styles in an effort to reach all students as testing this age group can be particularly difficult due to shyness, reading readiness and social pressures. For kindergarten and early elementary teachers, the use of an object lesson, such as an unusual pet or particularly old item, can help identify the students' primary learning styles. Young students who are kinesthetic learners are generally the first ones to ask "Can I hold it?" while visual learners are the ones who sit right in front, but may not want to touch what is being shown. Auditory learners are the ones who talk about the lesson the whole rest of the day. To observe students, it is best to have the object lesson taught by a co-worker or have a co-worker observe the students.

Teachers should be trained to take into consideration a variety of learning styles and make efforts to teach in ways that make true learning available to all students. Once teachers are familiar with these learning styles, classroom activities and study habits can be adjusted to accommodate the styles of any group of students.

1.3.4 Diversity in Play

Students are found to be different in their play style. This is in the sense that they prefer different types or varieties of game and sport for their release of energy. Some prefer indoor games and some outdoor ones; some prefer adventure sports while some prefer simple ones. Even their play time and play style are different for the same game/sport. Some students prefer simulated games while some other prefers to enjoy the games/ sports rather to play the same.

An examination of the relationship of play and diversity is important for at least three reasons.

- First, a rapidly growing population of young children from culturally diverse backgrounds is entering schools.

- Second, play is a way for children to learn about the world around them and to learn cultural values. They not only learn about themselves but also about differences in other people.
- And finally, early education programs must work to enhance a positive awareness of individual differences and cultural diversity as a whole. Play experiences may serve as an excellent way to help teach children about the differences in other people and that these differences are not bad.

Play is something which is greatly influenced by the culture and its elements. Cliff (1990) examined the relationship between games, religion, myths, and ceremonies in the Navajo culture. She noted an interrelationship between play and other aspects of Navajo culture. Many games and the use of toys in play activities, for example, are interconnected with or founded in religious beliefs. She also discusses that cheating in games is not viewed negatively. It is seen in the same way as Euro Americans view pranks on April fool's Day. However, individuals caught cheating may face reprimands. Cliff also indicates that exposure to Euro American culture has changed the play of Navajo children somewhat, but that in many instances they have modified the activity to fit their own gaming practices.

Play is also a way for young children to practice the roles and skills they will need as adults and these specific play behaviors may vary from culture to culture. For example, Fortes (1976) discussed play by children of the Tallensi people of North Africa and found that the play of children in that society tended to reflect the culture as a whole. Since farming and hunting were important parts of the culture, boys tended to play hunting games and practiced bow and arrow skills as a way of mastering the skills needed as adults. However, he noted that some play behaviors were observed which could occur anywhere.

Fraser (1966) describes how toys and playthings reflect the culture in which children live. She notes that the toys and playthings available for children sometimes have religious significance, may often be related to the materials or skills of the people, and will reflect the time period in which children live. For example, she notes that Eskimos made ivory toys because ivory was readily available; those peoples who lived near water often made toy boats, and astronaut toys in the United States were not available until the late 1950s with the advent of space travel. Some play materials such as toy animals or balls appear to be common among children everywhere.

Children are also aware of their gender differences in play. Fagot and Leinbach (1989) found that boys and girls could correctly perform a gender labeling task starting from

28 months of age. Honig (1983) indicated that gender identity is achieved before three years of age even though some toddlers between 18 months and two years can label other children correctly by sex.

Young children are aware of differences in other children, and this awareness seems to follow a pattern from an awareness of gender, to racial differences, to disabilities. Consistent across this literature are indications that children tend to play with peers who are similar to them.

1.3.5 "Check Your Progress"-3

1. Define learning style.

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2. Who are logical learners?

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3. Briefly explain how children's plays are influenced by time and place?

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4. How can a teacher identify the learning styles of different age groups?

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5. What factors affect play during childhood?

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Unit -1.4 ◻ Addressing Diverse Learning Needs in the Classroom

Structure

4.1 Introduction

1.

In today's classroom we find students from different background and culture. Some are normal, some have single disability and some have multiple disabilities. It has been a constant threat for the teacher of how to deal them. Let's read the unit and find out how a teacher can deal with the students of different disability.

1.4.2 Objectives

After going through the unit content, you would be able to:

- Know how a teacher can deal students of different disabilities
- Understand the pedagogic methods and approaches needed for dealing diversity

1.4.3 Addressing Diverse Learning Needs in the Classroom

When a teacher enters into the classroom s/he finds a diverse group of students in the class. These students have different physique, psychological makeup and cultural background. So for the teacher it is needful to know how s/he can transact the class in the best possible way. He are some ways-

1. Get a sense of how students feel about the cultural climate in your classroom. Let students know that you want to hear from them if any aspect of the course is making them uncomfortable. During the term, invite them to write you a note (signed or unsigned) or ask on mid-semester course evaluation forms one or more of the following questions

(adapted from Cones, Janha, and Noonan, 1983):

- Does the course instructor treat students equally and even handedly?
- How comfortable do you feel participating in this class? What makes it easy or difficult for you?
- In what ways, if any, does your ethnicity, race, or gender affect your interactions with the teacher in this class? With fellow students?

2. *Introduce discussions of diversity at department meetings.* Concerned faculty can ask that the agenda of department meetings include topics such as classroom climate, course content and course requirements, graduation and placement rates, extracurricular activities, orientation for new students, and liaison with the English as a second language (ESL) program.

3. *Become more informed about the history and culture of groups other than your own.* Avoid offending out of ignorance. Strive for some measure of "cultural competence" knows what is appropriate and inappropriate behavior and speech in cultures different from your own. Beyond professional books and articles, read fiction or nonfiction works by authors from different ethnic groups. Attend lectures, take courses, or teams teach with specialists in Ethnic Studies or Women's Studies. Sponsor mono- or multicultural student organizations. Attend campus-wide activities celebrating diversity or events important to various ethnic and cultural groups. If you are unfamiliar with your own culture, you may want to learn more about its history as weil. Shortcomings in ciass, and give your students an opportunity to discuss them.

4. *Aim for an inclusive curriculum.* Ideally, a curriculum should reflect the perspectives and experiences of a pluralistic society. At a minimum, creating an inclusive curriculum involves using texts and readings that reflect new scholarship and research about previously underrepresented groups, discussing the contributions made to your field by women or by various ethnic groups, examining the obstacles these pioneering contributors had to overcome, and describing how recent scholarship about gender, race, and class is modifying your field of study. This minimum, however, tends to place women, people of color, minority (both religious and linguistic) in right place.

5. *Emphasize the importance of considering different approaches and viewpoints.* One of the primary goals of education is to show students different points of view and encourage them to evaluate their own beliefs. Help students begin to appreciate the number of situations that can be understood only by comparing several

interpretations, and help them appreciate how one's premises, observations, and interpretations are influenced by social identity and background.

6. *Reevaluate your pedagogical methods for teaching in a diverse setting.* In a class various categories of students are found as far as their learning style and assumption about teaching and teachers. A teacher must be dynamic enough to deal various students effectively with different approaches congenial to them.

7. *Speak up promptly- if a student makes a distasteful remark even jokingly.* Don't let disparaging comments pass unnoticed. Explain why a comment is offensive or insensitive. Let your students know that racist, sexist, and other types of discriminatory remarks are unacceptable in class. For example, "What you said made me feel uncomfortable.

8. *Avoid singling out students as spokespersons.* It is unfair to ask X student to speak for his or her entire race, culture, or nationality. To do so not only ignores the wide differences in viewpoints among members of any group but also reinforces the mistaken notion that every member of a minority group is an ad hoc authority on his or her group (Pemberton, 1988). Relatedly, do not assume all students are familiar with their ancestors' language, traditions, culture, or history.

9. *Advise students to explore perspectives outside their own experiences.* For example, encourage students to take courses that will introduce them to the literature, history, and culture of other ethnic groups.

10. *Involve students in your research and scholarly activities.* Whenever you allow students to see or contribute to your own work, you are not only teaching them about your field's methodology and procedures but also helping them understand the dimensions of faculty life and helping them feel more a part of the college community (Blackwell, 1987).

11. *Recognize any biases or stereotypes you may have absorbed.* Do you interact with students in ways that manifest double standards? For example, do you discourage women students from undertaking projects that require quantitative work? Do you undervalue comments made by speakers whose English is accented differently than your own?

12. *Treat each student as an individual, and respect each student for who he or she is.* Each of us has some characteristics in common with others of our gender, race, place of origin, and socio-cultural group, but these are outweighed by the many differences among members of any group. We tend to recognize this point

about groups we belong to ("Don't put me in the same category as all those other Biharis/Odias/Bengalis you know") but sometimes fail to recognize it about others. However, any group label subsumes a wide variety of individuals-people of different social and economic backgrounds, historical and generational experience, and levels of consciousness. Try not to project your experiences with, feelings about, or expectations of an entire group onto any one student. Keep in mind, though, that group identity can be very important for some students. School/College may be their first opportunity to experience affirmation of their national, ethnic, racial, or cultural identity, and they feel both empowered and enhanced by joining mono-ethnic organizations or groups.

13. *Rectify any language patterns or case examples that exclude or demean any groups.* Do you

- Use terms of equal weight when referring to parallel groups: men and women rather than men and ladies?
- Use both 'he' and 'she' during lectures, discussions, and in writing, and encourage your students to do the same?
- Recognize that your students may come from diverse socioeconomic backgrounds?
- Refrain from remarks that make assumptions about your students' experiences, such as, "Now, when your parents were in college . . . "?
- Refrain from remarks that make assumptions about the nature of your students' families, such as, "Are you going to visit your parents over spring break?"
- Try to draw case studies, examples, and anecdotes from a variety of cultural and social contexts?

14. *Do your best to be sensitive to terminology.* Terminology changes over time, as ethnic and cultural groups continue to define their identity, their history, and their relationship to the dominant culture. To find out what terms are used and accepted on your campus, you could raise the question with your students, consult the listing of campus wide student groups, or speak with your faculty.

15. *Convey the same level of respect and confidence in the abilities of all your students.* Research studies show that many instructors unconsciously base their expectations of student performance on such factors as gender, language proficiency, socioeconomic status, race, ethnicity, prior achievement, and appearance (Green, 1989). Research has also shown that an instructor's expectations can become self-

fulfilling prophecies: students who sense that more is expected of them tend to outperform students who believe that less is expected of them - regardless of the students' actual abilities (Green, 1989; Pemberton, 1988). Tell all your students that you expect them to work hard in class, that you want them to be challenged by the material, and that you hold high standards for their academic achievement. And then practice what you have said: expect your students to work hard, be challenged, and achieve high standards. (Green, 1989; Pemberton, 1988).

16. *Don't try to "protect" any group of students.* Don't refrain from criticizing the performance of individual students in your class on account of their ethnicity or gender. If you attempt to favor or protect a given group of students by demanding less of them, you are likely to produce the opposite effect: such treatment undermines students' self-esteem and their view of their abilities and competence (Hall and Sandler, 1982). For example, one faculty member mistakenly believed she was being considerate to the students of color in her class by giving them extra time to complete assignments. She failed to realize that this action would cause hurt feelings on all sides: the students she was hoping to help felt patronized and the rest of the class resented the preferential treatment.

17. *Be evenhanded in how you acknowledge students' good work.* Let students know that their work is meritorious and praise their accomplishments. But be sure to recognize the achievements of all students. For example, one student complained about her professor repeatedly singling out her papers as exemplary, although other students in the class were also doing well. The professor's lavish public praise, though well intended, made this student feel both uncomfortable and anxious about maintaining her high level of achievement.

18. *Make it clear that you value all comments.* Students need to feel free to voice an opinion and empowered to defend it. Try not to allow your own difference of opinion prevent communication and debate. Step in if some students seem to be ignoring the viewpoints of others. For example, if male students tend to ignore comments made by female students, reintroduce the overlooked comments into the discussion (Hall and Sandler, 1982).

19. *Encourage all students to participate in class discussion.* During the first weeks of the term, you can prevent any one group of students from monopolizing the discussion by your active solicitation of alternate viewpoints. Encourage students to listen to and value comments made from perspectives other than their own. You may want to have students work in small groups early in the term

so that all students can participate in nonthreatening circumstances. This may make it easier for students to speak up in a larger setting. See "Collaborative Learning: Group Work and Study Teams," "Leading a Discussion," and "Encouraging Student Participation in Discussion." healing belief systems. A faculty member in the social sciences gave students an assignment asking them to compare female-only, male-only, and male-female work groups.

20. *Meet with students informally.* Frequent and rewarding informal contact with faculty members is the single strongest predictor of whether or not a student willvoluntarily withdraw from a college (Tinto, 1989). Ongoing contact outside the classroom also provides strong motivation for students to perform well in your class and to participate in the broad social and intellectual life of the institution. In addition to inviting groups of your students for coffee or lunch, consider becoming involved in your campus orientation and academic advising programs or volunteering to speak informally to students living in residence halls or to other student groups.

21. *Provide opportunities for all students to get to know each other.* The teacher must create and initiate opportunities for students for various kind of interactions-academic and non-academic. This would generate positive vibration among students.

22. *Dealing students of different learning styles.* The teacher may take the following facts into considerations while dealing students of diverse learning styles-

- Appreciating the individuality of each student is important. While generalizations sensitize us to important differences between groups, each individual student has unique values, perspectives, experiences and needs.
- Articulate early in the course that you are committed to meeting the needs of ail students and that you are open to conversations about how to help them learn.
- As teachers, it is important that we recognize our own learning styles and cultural assumptions, because these styles and assumptions influence how we teach and what we expect from our students. Being aware of them allows us to develop a more inclusive teaching style.
- As you plan your course, and each class, prepare multiple examples to illustrate your points. Try to have these examples reflect different cultures, experiences, sexual orientations, genders, etc., to include all students in learning.

- Help students move between abstract, theoretical knowledge and concrete, specific experiences, to expand everyone's learning.
- Use different teaching methods (lectures, small groups, discussions, collaborative learning) to meet the variety of learning needs.

23. *Dealing students of Special needs.* Below are suggestions to consider when a teacher works with students with special needs:

24. *Monitor your own behavior in responding to students.* Research studies show that teachers tend to interact differently with men and women students (Hail and Sandier, 1982; Sadker and Sadker, 1990) and with students who are - or whom the instructor perceives to be - high or low achievers (Green, 1989). More often than not, these patterns of behavior are unconscious, but they can and do demoralize students, making them feel intellectually inadequate or alienated.and unwelcome at the institution.

As you teach, then, try to be evenhanded in the following matters:

- Recognizing students who raise their hands or volunteer to participate in class (avoid calling on or hearing from only males or only members of one ethnic group)
- Listening attentively and responding directly to students' comments and questions
- Addressing students by name (and with the correct pronunciation)
- Prompting students to provide a fuller answer or an explanation
- Giving students time to answer a question before moving on
- Interrupting students or allowing them to be interrupted by their peers
- Crediting student comments during your summary ("As Akim said. , . ")
- Giving feedback and balancing criticism and praise
- Making eye contact

25. *Assign group work and collaborative learning activities.* Students report having had their best encounters and achieved their greatest understandings of diversity as "side effects" of naturally occurring meaningful educational or community service experiences, Consider increasing students' opportunities for group projects in which three to five students complete a specific task, for small group work during class, or for collaborative research efforts among two or three students to develop instructional materials or carry out a piece of a research study. Collaborative

learning can be as simple as randomly grouping (by counting off) two or three students in class to solve a particular problem or to answer a specific question.

26. *Give assignments that recognize students' diverse backgrounds and special interests.* As appropriate to your field, you can develop paper topics or term projects that encourage students to explore the roles, status, contributions, and experiences of groups traditionally underrepresented in scholarly research studies or in academia (Jenkins, Gappa, and Pearce, 1983). For example, a faculty member teaching a course on medical and health training offered students a variety of topics for their term papers, including one on alternative

- Even though two students may have the same disability, their needs for accommodation may be quite different. Treat each student as an individual.
- Keep in mind that disabilities are not always visible to us, You are not required to assess a student's health; you should accept authorized documentation concerning an individual student's needs.
- Using many modes (written, verbal, video/slide, etc.) to present information is one way to help some learners with special needs learn more effectively.

1.4.4 "Check Your Progress" - 4

1. What language caution a teacher must use in a classroom?

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2. Write two suggestions about how a teacher can deal with students of special need.

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3. What is inclusive curriculum?

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Unit - 1.5 □ Diversity : A Global Perspective

Structure

1.5.1 Introduction

Diversity is a term which has got a momentum these days. People from different parts of the world feel its very nature now-a-days than never before. In this context how is education going to deal with it is a vital question. Let us read this unit to know more about it.

1.5.2 Objectives

After going through the unit content, you would be able to:

- Know the perspective of diversity at a global level
- Comprehend how the scholastic process need to accommodate as per the demand of diversity

1.5.3 Global Perspective of Diversity

Diversity has been accepted globally as a celebrative force. With the emergence of global consciousness and humanitarian concern, it has received new vigor and perception. It is now considered as strength to the existing population. A multicultural perspective to life and living is what we now call diversity,

Globally when we perceive diversity we find its proximity with multiculturalism. Because culture is an umbrella term that includes language, ethnicity, religion and even nationalism.

Indian culture is known as indology. It includes the all-comprehensive aspects of Indian society including its Diaspora. That is why in the present unit our concentration is on multiculturalism as a global feature that denotes diversity in its full perspective.

Multiculturalism is the process of interpreting things and concepts from broader and comprehensive perspectives. It strives to integrate multi-ethnic and multi-dimensional perspectives, both present and past, into the traditional curriculum that is primarily mono-ethnic. It is an idea, a process, a reform movement, and a commitment. The process is one in which a person becomes multi-cultural and develops competencies in multiple ways of perceiving, evaluating, believing, and doing. It means that one has to focus on developing the ability to negotiate cultural diversity. Developing a multicultural perspective requires dialogue between people with different points of view, acknowledgment of different experiences, and respect for diverse opinions. It creates space for alternative voices, not just on the periphery but in the center.

Education is one of the basic areas that facilitate diversity. Researchers have found that a multicultural atmosphere facilitates students' best growth. Herrera, Murry, and Morales Cabral (2007) provide a review of current researches and note the following findings:

- Ethnic identity is the strongest predictor of overall wellness for CLD [culturally and linguistically diverse] students (Dixon, Rayle, & Myers, 2004),
- Higher levels of positive socio-emotional development are consistent with a student's positive identification with both his/her own and the majority group's culture (Shrake &Rhee, 2004).
- Low levels of ethnic identity, characterized by negative attitudes toward one's own group, can result in psychological distress, including feelings of marginality, low self-esteem, and depression (Phinney, 1993).

The findings above say that multiculturalism is the right perspective of education. The need has been more fully felt because of transport and communication revolution which greatly helped hybridization of population in different places of the world.

The following changes are noticed in teaching learning process with respect to diversity. The popular term which has been used is multi-culturalism.

1.5.3.1 Teacher

Multiculturalism requires all the teachers to examine themselves to identify their biases and ethno-centrism and developing behaviors to transcend them. This is especially crucial for teachers if they want to be effective with students from diverse backgrounds. A multicultural classroom, then, is one that features positive teacher expectations for all students, a learning environment that supports positive interracial contact, and a curriculum that is multicultural in content and varied in pedagogy,

For educators there are some critical questions that deserve serious reflection. Among these are those raised by Valerie Ooka Pang. Pang says that teachers need to answer the following questions for them.

- Who am I? Am I prejudiced?
- What do I think about culturally diverse communities?
- What does multicultural education look like in a classroom?

In answering these, the first question should be framed from the idea that each teacher is a cultural being, one who has undoubtedly been socialized to see certain world views as valid and valuable. Educators learning about their own cultural orientation should recognize that others—their colleagues, students, parents—have also been socialized in these ways. Diverse populations mean that these others might have been socialized to see opposite views, values, and traditions as valuable and valid. It then becomes a duty of all engaged in the teaching and learning process to understand the importance of negotiation in creating a classroom environment comfortable for all.

Many of us as educators have been taught to think that education is neutral and apolitical. As Bennett reminds us, education is neither neutral nor apolitical. Every educational decision that is made at any level of education reflects someone's socialized world view and cultural orientation. If we are then to create classrooms and schools that are truly multi-culturally sensitive, all elements and traditions that are a part of the schooling process must be examined and restructured.

Educators committed to multiculturalism should concentrate on the following:

- A curriculum that is anti-racist and anti-sexist
- The promotion of critical consciousness in students and a curricular focus on social justice issues
- A multicultural curriculum that represents basic education for all students since they will all need this knowledge for success in their adult lives
- Multiculturalism as an ongoing process that crosses all content areas and all other aspects of schooling

Teachers embracing multiculturalism demonstrate that the democratic ideals on which the country was founded apply to their school life and to their personal lives.

1.5.3.2 Curriculum

Considering the content, an educator's primary concern should be that of enabling students to develop an understanding of collective history—the places in time and space where people's lives intersect but also the lives of groups of people prior to and after such intersections. Such an approach will allow students to fully understand the roles and contributions of various groups of people to human civilization and culture.

Curriculum must include such experiences that allow students to explore events, concepts, issues, and themes from multiple perspectives. These perspectives over time should be broad so that students don't end up inadvertently creating new stereotypes of different groups. Primary sources in the voices of the people they represent should be used as frequently as possible. Such an approach will help students to understand that one issue or event can be viewed in different ways by different people.

A second important aspect of the curriculum is that it should be relevant to the lives of students and should reflect their images as well as their natural experiences. The content, therefore, should reflect everyday aspects of living and the daily experiences of students. This will sometimes create a necessity for teachers to select illustrations, create analogies, or relate allegories that will connect new information to the experiences of the students. To do an effective job in this area, teachers will need to develop their knowledge about the socio-cultural backgrounds of their students.

It is also important to give depth and meaning to information. This is especially true when looking at historical figures. Students should be given an accurate well-rounded view of people. For example when talking about Mahatma Gandhi he is portrayed as a freedom fighter, a peacemaker, but he should also be portrayed as a champion of

Sarvodaya, as a family man, and so on. It is also important that historical figures and their accomplishments be shared with students in regard to their historical time period and the social, economic, political, and geographical conditions in existence at that place and time. The dress, eating habits, and other customs of a people can be appreciated when viewed from these perspectives. The significance of an invention or discovery can also be more appreciated by students in today's technological society when viewed in this way.

Finally, a multicultural curriculum focuses on the integration of content across disciplines. Students are made understand that all things in life are interconnected, that they use science and math, for example, in many activities in their daily lives. When we teach content as separate entities, many students come to believe that one discipline has nothing to do with any other.

1.5.3.3 Teaching Context

The classroom environment demonstrates students about the values of diversity. With the increased hybridization of classroom all over the world the instructional design, activities, interaction patterns, behaviors, and expectations need to be fair and equitable for all. In a pluralistic society, educators need to be keenly aware that many of the traditional school patterns accommodate some students and work consistently against others. One example is interaction patterns. Some students' learned communication style is more indirect than direct; some students require thinking time before responding to a question; some students answer questions indirectly and give extraneous information in the process. Other elements that need examination include student mobility in the classroom, classroom organization, promotion of relationships (between students and between students and teachers), use of tone (hopefully a positive one), and use of nonverbal communication, which frequently conveys more than verbal communication.

Overall, in the area of classroom climate, the classroom needs to be inviting, its decorations should reflect images of all the students, and the focus should be on active involvement of the students. We as educators, to be successful in this and other areas with diverse student populations, must examine our assumptions of what schools and classrooms.are supposed to be and do.

1.5.3.4 Instructional Strategies

A final area that requires changes when trying to design a multi-culturally sensitive classroom is that of instructional methodology. It is known from classroom research that especially people learn and process information in different ways. This knowledge

creates a necessity for teacher usage of a variety of teaching strategies or techniques. In multicultural classrooms, teachers hold high expectations for all students, and the use of a variety of pedagogy and learning activities reflects the teacher's commitment to providing equitable access for all students to the opportunity to achieve socially, vocationally, and academically.

What, then, would be some of the pedagogy and learning activities in a classroom structured for the academic success of alf students? Obviously there are many techniques that could be used with students over a period of time or within one instructional block. Additionally, different strategies make sense for different kinds of activities and knowledge-building opportunities, and the appropriateness of a given strategy to the content being taught is just as important as the use of a variety of methodologies. Some of the instructional strategies and activities that an educator would want to master and use effectively and appropriately would include the following: whole class and small group discussion, cooperative learning strategies, direct instruction or lecture, peer teaching or tutoring, student questioning, role play and simulations, interactive lectures, critical thinking or problem solving activities, panel discussions, inquiry-based activities, the use of rnanipulatives and learning centers, and activities geared to teaching students study, memorization, listening, coping, and test-taking strategies and skills.

Equity pedagogy is an approach which is popular now-a-days. This is the process of modifying the materials and learning strategies appropriate to both boys and girls and to various ethnic groups. It includes culturally relevant teaching methods and issue-centric education that best suits to diverse group of learners.

Obviously the use of these types of instructional strategies and activities requires the arrangement of a suitabe physical environment and thoughtful instructional sequencing, Related to instruction and other areas requiring reflection are the teacher's view of knowledge construction, the socialized communication patterns of both students and teacher, teacher planning, and assessment. People construct knowledge for themselves, usually based on the prior experience and prior knowledge they have relative'to a subject. In this regard, educators need to come to view themselves as facilitators of learning rather than as information givers. Students also come from cultural backgrounds that sometimes have produced in them greater facilitation with some types of communication strategies than with others. Thus, instruction needs to be reflective of an appreciation for this range of communication patterns students are likely to have mastered.

Finally, assessment in a multi-culturally sensitive classroom must be reflective of the

same appreciation of diversity that curriculum, climate, and instructional strategies show. It is, therefore, important that assessments are done through a variety of techniques—in both written and oral forms, but also through portfolio collections, performance projects, observations, and so on.

1.5.4 "Check Your Progress" - 5

1. What aspect should a teacher keep in mind while dealing students in a multicultural classroom?

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2. What criterion we must fix in order to make the curriculum truly multicultural?

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3. What is equity pedagogy?

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1.5.6 Let Us Sum Up

Diversity refers to *all* of the ways in which people are different. It encompasses acceptance of and respect to differences which are genuine to humanity, The difference can be in the dimensions of race, ethnicity, gender, sexual orientation, socio-economic status, age, physical abilities, religious beliefs, political beliefs, or other ideologies.
Diversity has four dimensions as far as humanity is concerned-organizational, external, internal and personality dimension.
The common types of diversity are gender diversity, cultural diversity, linguistic diversity and socio-economic diversity.

Disability has three dimensions: body structure and function related (and impairment thereof), activity related (and activity restrictions) and participation related (and participation restrictions)..

Diversity in learning indicates difference in style of learning. Learning styles are most often divided into three basic groups. There are the auditory learners, visual learners and kinesthetic or tactile learners. In addition to these basic groups, some educational theorists also recognize verbal, logical, social and solitary as additional styles.

Children display diversity in their play with respect to their gender, culture, race, ethnicity and religion.

All around the world diversity has brought the concept of multi-culturalism. In education we also find the same. The use of ethno-pedagogy and ethno studies and multiple techniques to satisfy diverse leaning needs are some of the examples.

1.5.7 Answer to 'Check Your Progress'

"Check Your Progress"-1

1. Diversity is the manifestation of plurality in the natural world and of human world that brings variety in life style.
2. The four major levels of diversity in human being are organizational dimension, external dimension, internal dimension and personality dimension.
3. Our ability to recognize, understand, and adapt to the differences is called Diversity Consciousness.

"Check Your Progress"-2

1. The engagement of women in typical jobs like nursing and cooking is example of gender stereo-typing.
2. While race relates to physical differences, ethnicity focuses on cultural distinctiveness.
3. The gap between people with regard to their ability to access and use information and communication technologies is called digital divide.
4. In a multi-lingual country people need to choose a particular language for communication and administration. That is called lingua franca.

5. Schizophrenia is a mental disorder characterized by disturbances of thinking, mood, and behavior.
6. Mention two symptoms of dyscalculia.
   i. Mental visualizations are hard for the child.
   ii. Simple calculations in the mind are hard to render for a dyscalculia-affected child.

"Check Your Progress"-3

1. Learning style is the typical way of conceptualizing a content matter as a learner goes through the curriculum
2. Logical learners are those students who most enjoy problem solving, logic games and reasoning.
3. The children of people living near water prepare play boat (paper boat) is an example of influence of place over play. And astronaut toys in the United States were not available until the late 1950s with the advent of space travel; this is an example of influence of time over play.
4. For older students, teachers can use curriculum for teaching learning styles and then offer personality tests specifically designed to help identify their students' styles.

   With middle school students, teachers should incorporate a variety of learning styles in an effort to reach all students as testing this age group can be particularly difficult due to shyness, reading readiness and social pressures.

   For kindergarten and early elementary teachers, the use of an object lesson, such as an unusual pet or particularly old item, can help identify the students' primary learning styles.
5. Religion, myth, ethnicity, race and gender are some of the factors that affect play in childhood.

"Check Your Progress"-4

1. The teacher must address students of both genders with equal honor. There must not be linguistic unfairity to any of these groups.
2. i. Even though two students may have the same disability, their needs for accommodation may be quite different. Treat each student as an individual.

ii. Using many modes (written, verbal, video/slide, etc.) to present information to cater to the demand of these students.

3. Curriculum that reflects the perspectives and experiences of a pluralistic society is called inclusive curriculum.

"Check Your Progress"-5

1. Multiculturalism requires all the teachers to examine themselves to identify their biases and ethno-centrism, and developing behaviors to transcend the said.
2. Curriculum must include such experiences that allow students to explore events, concepts, issues, and themes from multiple perspectives.
3. Equity pedagogy is the process of modifying the materials and learning strategies appropriate to both boys and girls and to various ethnic groups.

1.5.8 Unit End Exercises

1. Give the concept of neuro-diversity.
2. What does diversity education intend?
3. How has globalization affected the diversity culture?
4. What do you understand by socio-economic diversity?
5. What kind of diversity do we find in disability?
6. Briefly describe how as a teacher you can address diverse learners?
7. What is muiti-culturalism?

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Unit-2 ▫ Introduction to Inclusive Education

Structure

2.1 Introduction

Disability is seen as a prominent developmental issue in any country, as the disabled group in a society is often become marginalized due to exclusion from the mainstream society leading to poverty. Inclusive Education approach doesn't only provide the provision of basic human rights to education but also the dignity of human being which is often being linked with the socio-economic status in the community. It is seen as a device for both access and equity in education which are also the fundamental aspirations of Education for All programme (UNESCO, 1990) and Millennium Development Goal Action Frameworks (Millennium Summit of the United Nations, 2000). Through inclusive education the learners may get a chance for not only getting into the system but also a support to complete it successfully. Inclusive education results in improved social development and academic outcomes for all learners as it provides opportunity to get exposed to the real world which leads to the development of social skills and better social interactions. It also provides platform to the non-disabled peers to adopt positive attitudes, tolerance. An important prerequisite for inclusive education is to have respect for differences, respect for different learning styles, variations in methods, open and flexible curricula and welcoming each and every learner into the common platform. Thus, the perspectives of seeing the disabled learner has been changed to differently-abled or special need learner.

Success of any learner is dependent on both the school and community, but, both of them may possess barriers in implementing the inclusive education policy. These barriers are both external and internal in nature. In order to facilltste inclusive c.tucstlon, there has to have a modification in the environmental conditions which includes the physical changes for barrier free environment in each of the school buildings with adequate facilties. Apart from that very importantly, there is a need to change the negative attitudes of the common people and to develop their sense of responsibility towards the child with special needs (CWSN).

There is a need to provide proper training to the teachers dealing with the diverse needs of the learners, applying appropriate individualized pedagogy and assessment system. Barriers to access and success can be viewed in physical as well as structural sense. But more than that, it is the curriculum, the pedagogy, the examination and the schooling approach, which may also create barriers. Unless these unseen barriers are taken care of, access to all children with diverse needs would remain a far cry. The inclusive education movement, combined with technological development has come at this crucial juncture in our country. Choosing a holistic Inclusive approach to access and success in education is more likely to succeed in reaching education for all.

2.2 Objectives

- To understand the concepts of marginalizatlon and Incluslon:
- To understand the changing practices in education of children with disabilities in respect to segregation, integration and inclusion;
- To understand thc Diversity in classroom in the context of learning Styles, linguistic and socio-cultural multiplicity;
- To understand the basic principles of inclusive education;
- To acquire knowledge about primary Barriers to Inclusive Education.

2.3 Marginalization vs. Inclusion : Meaning and Definition

2.3.1 Marginalization : Meaning and Definition

'Marginalization' is social disadvantage and relegation to the fringe of society.

The term has been used first in France and then widely in Europe. Academically, it is now used across the disciplines of social sciences including philosophy, education, sociology, psychology, political science and economics.

Marginalization as the social exclusion is a process in which individuals or entire communities of people are systematically blocked from or denied full access to various rights, opportunities and resources that are naturally and normally available to members of a different group, and which are fundamental to social integration within that particular group (e.g., housing, employment, healthcare, civic engagement, democratic participation, and due process). The outcome of social exclusion is that affected individuals or communities are prevented from participating fully in the economic, social, and political life of the society in which they live.

Definition:

Marginalization is a process whereby something or someone is pushed to the edge of a social group and accorded lesser importance. This is predominantly a social phenomenon by which a minority or sub-group is excluded, and their needs or desires ignored. Tuus, marginalization leads to social exclusion.

Social exclusion is a multidimensional process of progressive social rupture, detaching groups.and individuals from social relations and institutions and preventing them from full participation in the normal; normatively prescribed activities of the society in which they live. It reflects the inability of our society to keep all groups and individuals within the reach of a society or to realise their full potential.

2.3.2 Inclusion: Meaning and Definition

The right of every child to education is proclaimed in the Universal Declaration of Human Rights (1948) as well as in the UN Convention on the Rights of the Child (1990), and reaffirmed in the World Declaration on Education for All (1990). Each Child is different with different learning needs, learning speeds and programming for education. Among these learners, some have more specialized needs than others, but the commitment to ensure their education too has been enshrined in Salamanca Conference (1994). 'Inclusive Education' is an approach that aims to realize the goals stated in these conventions, as an approach that involves homes, schools communities, employers and governments in ensuring that each and every child, regardless of his/ her individual needs or social circumstances, has equal opportunity to get a mainstream

education together with the children of other community. As the name implies, inclusive education seeks to ensure that no child is excluded, marginalised or segregated, that school is such a community to which everyone belongs, and that each child is learning what she is expected to learn.

Definition:

"Inclusion is seen as a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities, and reducing exclusion within and from education" (Booth, quoted in UNESCO 2001).

"Inclusive Education involves changes and modifications in content, approaches, structures and strategies, with a common vision which covers all children of the appropriate age range and a conviction that it is the responsibility of the regular system to educate all children" (UNESCO, 1994).

"Inclusion, when the position of children with disabilities is considered as physically being in the same place and doing the same things as other students, social acceptance, and a right to individually relevant learning"(Norwich, 1999).

2.3.3 Marginalization vs. Inclusion

Marginalization theoretically emerges at the individual or group level on four correlated dimensions–(i) insufficient access to social rights, (ii) material deprivation, (iii) limited social participation and (iv) lack of normative integration. It is then regarded as the combined result of personal risk factors (age, gender, race etc.), macro-societal changes (demographic, economic and labour market developments, technological innovation, evolution of social norms etc.), government legislation and social policy, and the actual behaviour of businesses, administrative organisations and fellow citizens.

On the other hand, inclusion is a system in which all children from a given community learn together in the same local school setting including the children with learning difficulties, special needs or disabilities with certain changes in the education systems. Traditional systems of education tend to increase the gap between advantaged included students with disadvantaged excluded children. Middle and upper class children, who start out with more (in terms of opportunity, materials), are also given more in the traditional system, thus widening the gap in education and society between the haves and have not's. As for example, the marginalised children,

who start with less, are generally provided less in terms of equal educational opportunities propagating the vicious cycle of property and lack of opportunities.

International Journal of Inclusive Education (vol.16, Issue 12, 2012) focuses on the importance of engaging with children's voices in school settings in order to understand and deal with marginalization. Engaging with the views of children and young people is an essential part of the process of developing inclusion. It can be viewed as an approach to inclusive education, which predominantly places emphasis on the views of the learners, rather than on other organisational aspects within a school context.

2.4 Changing Practice in Education of Children with Disabilities : Segreagation, integration and inclusion

2.4.1 Changing Practice in Education of Children with special needs

Introduction of education of children with disabilities, in India, can be traced back to the dawn of 19th century. Special school services in the country were initiated mostly by foreign missionaries. The concept of inclusion has been finding its reference in many documents of nationalist education movements in the post independent period. The provision of better services to person with disabilities has been included in the Article 45 of the Indian Constitution. The Indian, Education Commission Report (1964-66), had recommended placement of the disabled child as far as possible in ordinary schools. The National Policy on Education (NPE, 1986) included a full chapter on Education of the handicapped and formulated guidelines for action. The NPE strongly emphasised the need for the expansion of 'integrated' education programme.

The centrally sponsored scheme of Integrated Education for Disabled Children (IEDC) was introduced in 1974 and later it was emphasised in the National Policy of Education (1986) as well as in the Programme of Action (1991). Therefore, efforts for inclusion were persistently made. Though these national documents emphasised the need for services for persons with disabilities, the actual implementation of activities for the disabled was not satisfactory in the past.

2.4.2 Segregation of Children with Special Needs

'Segregation' indicates that disabled children will only be treated separately. Some scholars believe that segregation is the best way to educate special child.

Segregated programs are designed and staffed by professionals that are trained to work with Child with Special Need (CWSN), which typically means they are better trained to teach special Child. Therapists are usually an integrated part of the system. However, there are downsides to segregation. Children that are segregated do not always have the challenge of learning with their peers, which can sometimes facilitate better learning and skills. Also, children that are segregated are not learning how to function in the community in hopes of becoming integrated into society. There are many educational environments that do not offer 'pure' segregated special education classes.

There are programs that combine inclusion and segregation, where the child might spend part of the day in a segregated program and the other part of the day in an inclusion program or s/he might spend the day in an inclusion program and receive remedial assistance and therapy. There may be different combinations of inclusive education.

2.4.3 Integration of Children with Special Needs

'Integration' is the beginning of inclusive education. No specific year could be cited for the Introduction of inclusive vis-a-vis integrated education in India. Special schools were adopting partial integration for disabled children at the secondary level in the beginning of 20th century itself. However, full-fledged integrated education programmes emerged only in the beginning of 1980s. Since 1980, the field has witnessed a phenomenal growth of integrated education.

Integrated education emerged out of compulsion rather than as an option in India. In the process of bringing more disabled children under the umbrella of educational services, integration was considered as the cost-effective aoproach and therefore, the general education system started accepting CWSN in general schools. The implementation of integrated education programme also addressed the needs of the high risk children who were suspected to be potential dropouts and therefore, retention of such children became high. With the success of integration in the past two decades, the country is now becoming ready for inclusive education. Inclusion aims at reinforcing better educational practices in the general school system which addresses the educational needs of all children.

Current Status of Integrated Education in India:

The centrally sponsored scheme of integrated education, initiated in 1974, had been implemented in all the States and Union Territories of the country. More

number of Government, institutions was intensively involved in integrated education in both the government and non-government organisations.

According to Mukhopadhyay and Mani (2000), "Across the disabilities, orthopedically disabled children are better identified than other disabilities at all levels of education. This factor also needs attention as the identification and assessment procedures yet to be developed to shift the focus on the actually deserving disabled children." The shore of disabled children in general schools is still much lower than the estimated number. The present coverage in integrated education is expected to be approximately 80.000 disabled children in over 18,000 schools. Integrated education concept has come to stay in the educational system in India and its full potential is yet to be explored.

2.4.4 Inclusion of Children with Special Needs

The country has been striving hard to provide education for all children since 2002. The direct and simple approach to answer the question whether children with special needs are being adequately covered and have benefitted from Education for All (EFA) would be to match the number of children in the related age group with that of children enrolled in schools including special schools, non-formal centres and / or open learning systems. Unfortunately, the data and information are neither collected in this manner nor the services made available presently at par with other children (Mukhopadhyay and Mani, 2000). Some of the related major acts and policies are discussed below:

Inclusion through the PWD Act, 1995:

The issue of the services for children with disabilities is treated as human resources development with the introduction of the Person with Disability (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995. As a result, the service for children with disabilities is no more considered a welfare activity; rather it is treated as the right of the disabled child.

The main purpnse of the PWD Act is to define responsibilities of the Central, State and Local Governments with regard to service for disabled persons. The Act also ensured coverage of total life to disabled individuals so as to make full contribution in accordance with their disability conditions. Blindness, Low Vision, Leprosy-Cured, Hearing Impairment; Loco motor Disability, Mental Illness, and Mental Retardation are the seven disability conditions covered under the Act. As per the

Act, the Governments shall ensure that suitable education should be provided till their age of 18. It also indicates that integrated education and special schools will have to be set up to meet the educational needs of the children with acute disabilities. Introduction of non-formal education, functional literacy schemes, provision of aids and appliances, education through open schools and universities etc., are also stressed in the Act. It also indicates that the Government should create adequate teacher training facilities to prepare teachers for special and integrated schools. Development of research on assistive devices is also envisaged in the Act. Many schemes are being evolved at the national and state levels to implement this Act. Therefore, the PWD Act 1995 is strongly encouraging inclusive education concepts wherever possible.

Role of the Rehabilitation Council of India (RCI) in Inclusion:

In 1932., the RCI Act was enacted in the Parliament. The Act was created by the then Ministry of Welfare (presently known as the Ministry of Social Justice and Empowerment) to regulate the manpower development programmes in the field of education of CWSN. Though RCI does not deal direccly with the promotion of services at the school level, it has projected the need for massive manpower development for facilitating education for all disabled children, The major responsibilities of the RCI are:

- To bring standardisation of training courses for rehabilitation professionals/ personnel dealing with people with disabilities;
- To prescribe minimum standards of education and training institutions in the field of rehabilitation uniformity throughout the country;
- To regulate these standards in all training institutions uniformly throughout the country;
- To recognise institutions running degree/ diploma/ certificate courses in the field of rehabilitation of the disabled and to withdraw recognition, whenever facilities are not satisfactory;
- To recognise foreign degree/ diploma/ certificate in the field of rehabilitation awarded by institutions on reciprocal basis;
- To maintain a Central Rehabilitation Register of persons possessing the recognised rehabilitation qualification;
- To collect information on regular basis, on education and training in the field

of rehabilitation of people with disabilities from institutions in India and abroad;

- To encourage continuing rehabilitation education by way of collaboration with organisations working in the field of rehabilitation of persons with disabilities.

Role of Special Schools and Inclusion:

Special school concept is still an accepted model of education for children with disabilities in India and it will continue to be so in the years to come. Presently there are about 3000 special schools addressing persons with different disabilities. It is estimated that there are 900 schools for hearing impaired, 400 schools for visually impaired, 1000 schools for mentally retarded and 700 for physically challenged children (by UNISED Report 1999). The exact number of special schools is not fully known as there are many NGOs who run those schools and are not yet included in the lists available. However, the responsibilities of special schools are likely to change in the future. Some of the desired changes are:

i. They are expected to become resource centre to facilitate inclusive education.

ii. They are in a better position to serve children with multiple disabilities. In the growing concept of inclusion the special schools have a vital role to play. Through inclusion is open to everyone, experiences in India reveal that some children may not cope with the inclusive setting. Children with additional disabilities, orphans etc., need some alternative settings and special schools may help equip themselves to serve these children.

2.5 Diversity in Classroom : Learning Styles, Linguistic and Socio-Cultural Multiplicity.

2.5.1 Diversity in Normal Classroom

Now-a-days the increasing number of learners from diverse backgrounds entering into the elementary classrooms has reinforced the importance of making our schools more inclusive. With a greater variation in the talents, and social, cultural, economic and political backgrounds of the learners the elementary class-room in India has been facing a challenge to use this diversity constrirtively in order to democratize the teaching-learning processes and practices, and achieve the larger goals of social

justice. In this context, the agenda of 'inclusive education' has gained importance. There has been a further impetus with the enactment of the Right of Children to Free and Compulsory Education (RTE) Act, 2009. The implementation of this Act will be considered successful only if it addresses the issue of making the children of marginalized communities 'visible' within the four walls of the classroom. Many of these children, across the country come from socially disadvantaged backgrounds, such as Scheduled Caste and Scheduled Tribe communities; ethnic and religious minorities, economically weaker sections, children of these communities are enrolled in school, they face the danger of dropping out. Many of them live in extremely vulnerable socic-economic conditions and face a serious threat to their universal rights, such as a school education.

Inclusive schools are designed with a vision and principles that believe in the culture of rights, social justice and equity. It believes that all children are not the same, and accepts the diversity as strength rather than a problem. It believes in certain basic pedagogy that children learn in different ways, and relates success more with the learning of life and social skills than scoring high marks in examinations. The admission policy of such schools should accept children from a diverse community rather than reject on the ground of admission test scores or other physical, social and economic factors. Inclusive schools might follow flexible curricula that would respond to these diverse needs of children. The UNESCO Framework has again highlighted the need of child-centred pedagogy for addressing the educational needs of the disadvantaged and the disabled: "The challenge confronting the inclusive school is that of developing a child-centred pedagogy capable of successfully educating all children, including those who have serious disadvantages and disabilities".

2.5.2 Diversity in Learners' Learning Style

Educators do not believe that all learners are the same. Yet, too often, educators continue to treat all learners alike while paying lip service to the' principle of diversity. Teachers know that students learn in different ways; the experience in the classroom confirms this every day. In addition, well-accepted theories and extensive research illustrate and document learning differences. Most educators can talk about learning differences, whether by the name of learning styles, cognitive styles, psychological type, or multiple intelligences. Learners bring their own individual approach, talents and interests to the learning situation.

The target of new inclusive schools is not that they are capable of providing

quality education to all children; their establishment is a crucial step in helping to change discriminatory attitudes, in creating welcoming communities and in developing an inclusive society according to their respective ability and learning style (Framework for Action on Special Needs Education; UNESCO, 1994). Traditional schools mostly offer scope for the use of only two types of intelligences - linguistic and logical-mathematical. This approach itself, creates learning barriers for a large number of children particularly those belonging to the first generation learners, the disadvantaged and the disabled. Gardner (1993), on the other hand, has identified seven types of intelligences - (i) Linguistic or Verbal, (ii) Logical Mathematical, (iii) Spatial or Visual, (iv) Musical, (v) Kinaesthetic, (vi) Interpersonal and (vii) Intra-personal. Schools encouraging the identification and application of these intelligences would be able to remove unseen and internal barriers that child learning face in traditional schools. Inclusive schools use variety of innovative practices to get children involved and participating in diverged learning processes. Some of the inclusive strategies are:

- Whole class inclusive teaching;
- Group/cooperative/collaborative learning;
- Peer tutoring/child-to-child learning;
- Activity based learning;
- Team approach/problem solving;
- Equity in assessment/examinations.

Inclusion in Education and its .evolution in school system as a process-for removing barriers to access and success is a growing phenomenon. The strategies suggested above have been tried out in many schools across the countries and have, also conceptual and pedagogical backing. However, it is yet to be shaped into a reform movement or as a replacement of the traditional school system.

2.5.3 Diversity in Learners' Linguistic ability

Language is not merely a means of communication. Language, thinking and learning are inextricably linked. When children are forced to study through a language they cannot fully understand, especially in the school level, they face a serious learning disadvantage that can stunt their cognitive development and adversely affect their self-esteem and self-confidence for life. This is especially severe in rnarginalised

socio-economic situations where there is little exposure to the school language, outside the school. This gets further exacerbated when the children's culture, along with their language, is completely excluded from the classrooms.

India is pluri-lingual and pluri-ethnic country. The language situations in India are like a mosaic with a bewildering variety of speech patterns that get woven together in an 'organic pluralism'. It is usually difficult to attach language labels to the varied speech patterns that differ from place to place. There is little agreement on which languages be called 'languages' and which ones be categorised as 'dialects' and why. A significant proportion of the Indian population is multilingual-even if their repertoire of the other languages is limited; different languages are used in different domains of life; there are many 'contact' languages that are used in inter-group communication, which are often hybrids of other languages; there areconstant language shifts that are taking place; in most parts of the country. Language assimilation is taking place resulting in Increasco homogenisation, especially in many tribal ereas: there are several diglossic patterns among many communities, for example, parents using the regional language when speaking with their children, while using their ancestral language with their elders. Thus, like several other countries in South Asia, language use patterns are complex and difficult to capture and any attempt at documenting speech patterns is a complex exercise.

The education system in India has not been able to respond so far to the complex cultural and linguistic diversity in the country. language-in-education policies have attempted to provide some standardised solutions, though it needs further exploration in the Indian context.

2.5.4 Diversity in Learners' Socia-Cultural Multiplicity

Another, dimension of inclusive society is tolerance for and appreciation of cultural diversity. This includes societies that celebrate multiplicity and diverse expressions of identities. In the process of celebrating diversity there is a scope for recognition and affirmation of the differences between and among members of a society, which enables the society to move away from labelling, categorizing, and classifying people, towards more inclusive policies. Also, enabling a diversity of opinions provides the checks and balances crucial for the development of a society, while allowing for the greatest amount of diverse opinions to enter into every discourse.

We also know that an individual learner's culture, family background, and socio-

economic level affect her/his learning. The context in which someone grows and develops has an important impact on learning. These beliefs, principles and theories have an important impact on the opportunities for success for every student in our schools. The cultural clash often causes students to struggle in school, and yet their individual strengths, if valued, respected, and promoted, would bring them success and increase their self-confidence.

We know that culture and learning are connected in important ways. Early life experiences and the values of a person's culture affect both the expectations and the processes of learning. This is important because we need all the information we can get to help every learner succeed in school, and because a deep understanding of the learning process should provide a framework for curriculum and instructional decisions.

Education plays a critical role in this area, as it can provide opportunities to learn the history and culture of one's own and others, which might cultivate the understanding and appreciation of other communities, cultures and religions. Particularly for young people, education provides the opportunity to instil such values of respect and appreciation of socio-cultural multiplicity in achieving the broader goal of democracy.

2.6 Principles of Inclusive Education: Access, Equity, Relevance, Participation and Empowerment

2.6.1 Concept of Inclusive Education

Inclusion is seen as a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities, and reducing exclusion within and from education. It involves changes and modifications in content, appreaches, strucnrres- and strategies, with a common vision which covers all children of the appropriate age range and a conviction that it is the responsibility of the regular system to educate all children.

Inclusion eduertion is concerned with providing appropriate responses to the broad spectrum of learning needs in formal, informal and non-formal educational settings, rather than being a marglna] issue on how some learners can be integrated in mainstream education. It is an approach that looks into how to transform education systems and other learning environments in order to respond to the diversity of learners. It aims towards enabling teachers and learners both to feel comfortable with

diversity and to see it as a challenge and enrichment of the learning environment, rather than a problem. Inclusion emphasizes providing opportunities for equal participation of persons with disabilities (physical, social and/ or emotional) whenever possible into general education, but leaves open the possibility of personal choice and options for special assistance and facilities for those who need it.

In particular, four key elements have tended to feature strongly in the conceptualisation of inclusion in education. Those are as follows:

i. Inclusion is a 'process'. That is to say, inclusion in education has to be seen as a never-ending search to find better ways of responding to diversity. It is about learning how to live with difference and learning how to learn from difference. In this way differences come to be seen more positively as a stimulus for fostering learning, amongst all children and adults.

ii. It is concerned with the 'identification and removal of barriers'. Consequently, it involves collecting, collating and evaluating information from a wide variety of sources in order to plan for improvements in policy and practice. It is about using evidence of various kinds to stimulate creativity and problem-solving of all learners.

iii. It is about the presence, participation and achievement of 'all students'. Here 'presence' is concerned with where children are educated, and how reliably and punctually they attend; 'participation' relates to the quality of their experiences whilst they are there and, therefore, must incorporate the views of the learners themselves; and 'achievement' is about the outcomes of learning across the curriculum, not merely test or examination results.

iv. It involves a particular emphasis on those groups of learners who may be at risk of marginalization, exclusion or underachievement'. This indicates the moral responsibility to ensure that those groups that are statistically most 'at risk' are carefully monitored, and that, where necessary, steps are taken to ensure their presence, participation and achievement in the education system.

2.6.2 Principles of Inclusive Education

The Social Good Summit (UN Foundations, 2014) defined that the aim of social integration is to create an inclusive society, in which every individual, each with rights and responsibilities, has an active role to play. But what makes some societies

more inclusive than others? What are the critical elements for creating and maintaining an inclusive society in practical terms?

An inclusive society is based on the fundamental value of human rights. If All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood." It is a society in which all members, regardless of their backgrounds, are able to motivate and to participate in civic, social, economic and political activities. For this to happen, legal, regulatory and policy frameworks must be inclusive, and uphold and promote just and inclusive processes in all areas of implementation, so that equal access to basic education, public space, facilities and information are ensured, and diversity and cultural pluralism are respected and accommodated.

As the pre-requisite, respect for all human rights, freedoms, and the rule of law, both at national and international levels, are fundamental. Every member of a society, no matter what his/her economic resources, political status, or social standing, must be treated equally under the law. Legal instruments ensure the guiding principles that will guarantee equity, justice and equal opportunities for all citizens. Violators of human rights should be brought to justice. The judiciary which serves to protect just societies must be impartial, accountable and inclusive. Maintaining the security of all individuals and their living environment is paramount in creating a feeling of inclusion and an atmosphere of participation in society. The major principles of Inclusive Education are given below:

2.6.2.1 Access:

In order to encourage all-inclusive participation, there must be universal access to public infrastructure and facilities (such as, education, community centres, recreational facilities, public libraries, resource centres, with internet facilities, well maintained public schools, clinics, water supplies, health and sanitations). These are the basic services which will create, when partly or fully put into place, conditions for people to have a sense of belonging by not suffering the painful consequence of being unable to afford them. As long as both the advantaged and disadvantaged have equal access to or benefit from these public facilities and services, they will all feel less burdened by their differences in socio-economic status, thus alleviating a possible sense of exclusion or frustration. It is important to note though, that access alone does not necessarily ensure use of public facilities, as unequal relations within communities and households may inhibit the use of facilities by vulnerable groups.

Addressing the unequal power relations is therefore a necessary step to increase participation.

Similarly, equal access to public information plays an important role in creating an inclusive society, as it will make popular participation possible with well-informed members of society. Information that pertains .to the society, such as what, a community owns, generates or benefits from, should be made available to all. Collective participation, through accepted representations of all classes and backgrounds, in the planning, implementation and evaluation of community activities should be sought after. Publication or information sharing and increasing the accessibility of the community's activities will eliminate doubts and suspicions which could otherwise create a sense of exclusion. The mass media can be used as an effective tool to educate and enlighten members of society.

2.6.2.2 Equity:

Equity in the distribution of wealth and resources is another critical element of inclusive society. How the resources are allocated and utilized will significantly affect the orientation of a society, either towards a more integrated, inclusive society, or an exclusive, polarized, and disintegrated one. Therefore, socio-economic policies should be geared up towards managing equitable distribution and equal opportunities. Inclusive policies, instructions and programs that are sensitive to and cater to the less advantaged and vulnerable need to be put in place in all areas/ sectors, including public health, and effectively implemented. There is a need for a strong monitoring and evaluation tools to demonstrate whether inclusiveness was actually achieved, as well as highlighted the areas for improvement.

2.6.2.3 Relevance:

Inclusion in education is concerned with the quality of education of all learners. Hence, its relevance should be in terms of:

- Learners should have a voice in decisions that affect them;
- In assessment - choosing different ways of showing what they know, understand and can do, being involved in discussions about assessment information and how it can support future learning;

- In the learning process -having different ways of accessing information, making it meaningful and expressing themselves;
- In planning their learning, taking personal factors into account;
- In the provision of support to overcome barriers to learning that does not stigmatise them or separate them from their peers;
- In curriculum - having a say in relevant, meaningful, personalised outcomes;
- In evaluating the learning outcomes to ensure educational achievement and well- being.
- All learners are entitled to be active participants in the life of the school and community;
- All learners should have a sense of belonging and feel secure in the school environment;
- Learners should have opportunities for collaboration and co-operative learning, with flexible peer groups to develop social and communication skills;
- Learners should take a full part in extracurricular and out-of-school activities;

In an inclusive set up, all.teachers should have positive attitudes and towards sllleainers of diverged ability and socio-cultural backgrounds. They should see diversity as strength and stimulus for their own learning.

2.6.2.4 Participation:

Social participation is understood as the act of engaging in society's activities. It refers to the possibility to influence decisions and have access to decision-making processes. Social participation creates mutual trust among individuals, which forms the basis for shared responsibilities towards the community and society.

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.

Therefore, resources to fully participate in all aspects of societal activities are the ultimate step for successful social inclusion. It is not only because of lack of

financial resources that people are unable to participate, or stop participating, but also because of conditions, such as insufficient time or energy, spatial distance, lack of recognition, lack of respect, physical conditions or constraints. These elements all need to be taken into consideration.

2.6.2.5 Empowerment:

According to a recent report for the World Bank Dlsability Group (2011), "Education is widelv seen as a means to develop human capital, to improve economic performance and to enhance individual capabilities and, chokes in order co enjoy freedoms of citizenship." Within this context, therefore, empowerment refers - "Acquiring the awareness and skills necessary to take charge of one's own life chances. It is about facilitating the ability of individuals (and.groups) to make their own decisions and, to a greater extent than hitherto, to shape their own destinies." Some educational theorists tie the concept to Freire's (1970) notion of "the collective struggle for a life without oppression and exploitation" and the expression of students' and teachers' 'voices' which can be emancipator in different levels. This is the understanding of empowerment embedded in these guidelines.

Social transformation requires self-formation. Curriculum can play an instrumental role in fostering tolerance and promoting human rights. It is the means by which respect for the dignity of persons .and awareness of responsibilities as national and global citizens are instilled in children. Such knowledge can be a powerful tool for transcending cultural, religious and other diversities and empowering teachers, students and all members of society. Furthermore, education is an important vehicle through which economically and socially marginalized adults and. children can be empowered to change their life chances, and obtaln the means to participate more ft!lly in their communities.

According to the -World Bank, "programs that expand the access of excluded groups to education have led to important shifts in mind-set among community members and government leaders regarding the contributions that those groups can make to society."

This is where change processes and empowerment go hand in hand to move towards inclusion for all learners.

Traditional Approach vs. Inclusive Approach:

A comparison between the traditional and inclusive approaches in education is given below:

Traditional Approach	Inclusive Approach
1. Education for some,	1. Education for all,
2. Static,	2. Flexible,
3. Collective teaching,	3. Individualistic teaching,
4. learning in segregated areas,	4. learning in integrated areas,
5. Emphasis on subject-oriented teaching,	5. Emphasis on child-centred learning,
6. Diagnostic/ prescriptive,	6. holistic
7. Opportunities limited by exclusion,	7. Equalisation of opportunities for all,
8. Disability View,	8. Curricular view,
9. Labels children disability wise.	9. Planning is made on ability levels and opposes all kinds of labelling of children.

2.7. Barriers to Inclusive Education: Attitudinal, Physical and Instructional

2.7.1 Barriers to Inclusive Education

The discussion on inclusive education started with proposition of the 'social model of disability', which proposes systemic barriers, negative attitudes and exclusion by society (deliberately or inadvertently) as the ultimate factors defining disability. This shift in the idea carne when it was realized that children in special schools were seen as geographically anti socially segregated from their peers and failure of meaningfully integrating students in mainstream.schools (integration). Inclusivc education is not only' limited to mainstreaming the lecrners with special needs but also concerned with identifying and overcoming all barriers to effective/continuous and quality participation in education.

While we cannot neglect the importance of inclusive education, it remains unanswered why the practice of inclusive education is presenting some problems. It appears that it is both at the level of Government policy, but rather at the level of implementation. While the policy states that all children should go to school - and

Governments are enforcing this rule - in many cases quality learning is not taking place, which is contradictory to the ethos of inclusive education. The reasons for the non-implementation of the inclusive education in India, is because of various barriers which according to Johan (2002) are both external and as well as internal. The external barriers are confronted before coming to and getting enrolled in schools, which includes physical location of schools, non-availability of school, social stigmatization or economic conditions of the learners. The internal barriers are mostly psychological barriers like self-concept, confidence etc. which are sometimes imposed by the external factors and first step to remove the internal barriers is to remove the external barriers. The following are some of the external barriers:

2.7.1.1 Attitudinal:

It has been noted that disabled students suffer from physical bullying, or emotional bullying. These negative attitudes results in social discrimination and thus, leads to isolation, which produces barriers to inclusion. Regarding disabled children some regions still maintain established beliefs that educating the disabled is pointless. It is sad to note here that these barriers are caused by our society, which is more serious to any particular medical impairment. The isolation which results from exclusion closes the doors of real learning.

The negative attitudes often develop due to lack of knowledge. Along with information about disability or condition, their requirements must be provided to peers, school staff and teachers as well. Increasing interactions between learners with special needs and community through organization of fairs, meetings, discussions etc. canplay very important' role to counsel the parents of these learners, especially in rural areas about the importance of providing education for developing self-reliant individuals. There is also a need to shift in perspectives and values so that diversity is appreciated and teachers are 'given skills to provide all children, including those with different learning needs with quality education. Also, at the policy level, it should be mandatory for all to educate about disability, so that a responsive individuals who respects disability could be developed.

2.7.1.2 Physical :

Along with the attitudinal barriers which are faced by the learners on the daily basis, another important barrier, is the physical barriers, which includes school buildings, playgrounds, washrooms, library, laboratory etc. Apart from this, the majprity.of schools are physically inaccessible to many learners because of poor

buildings, particularly in, rural areas. Since most schools are not equipped to respond to special needs poses blockage for learners in physically getting into school, many of the students require a personal assistant for such basic activities as taking personal care or remedial education efforts. Most school buildings don't respond to the requirement of these learners properly. For example, if there is a ramp, sometimes it is too steep, often the doors were too heavy for the student to open unaided which impedes the access.

Hence, it is important for implementing the inclusive education in schools, it is important to overcome such physical barriers. Along with basic changes in the architectural designs such as widening doorways, removing unnecessary doors, installing proper ramps, technology could be used in the form of motion sensors to open doors, flush toilets and automatic door buttons for easier access through doors. Voice recognition technology can also used for activating many of the above-mentioned barriers. Since, there is an inadequacy of resources available to meet the basic needs in education, it is estimated that for achieving the inclusive education goal will require additional financial support from the Governments.

2.7.1.3 Instructional :

The instructional barriers refer to the inadequacy of teaching and administrative practices carried out in ordinary schools that were chosen or are being chosen to become inclusive. The instructional barriers can be addressed by practicing the following principles: (i) Singularity - each student is unique; in this sense, the school needs to set individualized goals along with the student and/or her/his family; (ii) Multiple Intelligences - the teacher, when teaching the content of their respective discipline, needs to stimulate and use each student's entire brain; (iii) Learning style - the teacher, when planning their lessons, needs to focus on each student's learning peculiarities; (iv) learning evaluation the school needs to adopt the system based on selfhood (to compare the assessment of each student with other assessments of the same student, not of other students), on continuity (all-classes serve as evidence of learning) and on inclusiveness (assessments should help to include and not to exclude the student); (v) Coherence - the whole school needs to adopt inclusive attitudes: teachers and staff must undergo periodic training on inclusive education.

2.8 "Check Your Progress" 1 - 5

Check Your Progress - 1

1. Why is disability considered as a developmental issue of a society?

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2. Explain the significance of inclusive education.

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3. Define the concept of marginalization.

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4. Give an operational definition of inclusion.

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5. What are the important outcomes of inclusion of a society?

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Check Your Progress - 2

1. What do you mean by segregation?

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2. How the EFA programme is related with inclusive education?

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3. Explain the significance of PWD Act, 1995.

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4. State the major roles being undertaken by the RCI in developing inclusion in education.

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5. What do you mean by special school?

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Check Your Progress - 3

1. What do vou mean by diversity in classroom?

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2. State the significance of diversity in learners' learning style.

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3. Explain some major characteristics of diversity in learners' linguistic ability.

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4. What is meant by socio-cultural multiplicity in thc classroom?

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Check Your Progress - 4

1. Explain the concept of 'inclusive education'.

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2. What are the basic principles of inclusive education?

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3. How access is related with inclusive education?

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4. State the importance of equity in inclusion.

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5. Explain the significance of relevance in inclusive education.

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6. How is participation related with social inclusion?

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7. Why is empowerment considered as a basic principle of inclusive education?

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Check Your Progress - 5

1. What do you mean by barriers to inclusive education?

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2. Explain the attitudinal barriers to inclusion.

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3. Discuss the physical barriers to inclusive education.

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4. What ts meant by instructional barriers to inclusive education?

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2.9 Let us Sum Up

For Implementing the inclusive education successfully, it is important that teachers must have positive. attitudes towards learners with diverged needs. But, because of lack of knowledge, education, uederstanding, or effort the teachers give inapropriate substitute work to the learners, which eventually leads to learners dissatisfaction and poor quality of learning. Another important feature of the schools is high teacher-student ratios (average 1:45) and where it is expected that learners of diverse abilities have to be taught together. At the first place, there is a scarcity of trained teachers to deal with the diversity and secondly, it is very wrong to assume to deal with 45 learners with diversity. Hence, it is important to reduce the teacher-learner's ratio in the classroom, which is only possible if we have more schools with trained teachers to deal with the diversity of learners. At present, training to teachers is fragmented, uncoordinated and inadequate taking place in a segregated manner, i.e. one for special children and another for students with general capabilities; both of them are preparing teachers for the segregated schools. However, there is also an effort by SCERT, DIETs in providing ongoing training programme, which are not adequate because of various reasons. Therefore, it is important that an inclusive teacher education programme must be designed which can foster proper skills among teachers.

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Unit-3 : Adaptations Accommodations and Modifications

Structure :

3.1 introduction

Adaptations, accommodations, and modifications may seem like interchangeable terms, but when it comes to inclusion they carry significantly different meanings. Accommodations and modifications serve as two separate kinds of curricular adaptations.

Before defining into the differences between accommodations and modifications, let's take a step back and focus on the concept of curricular adaptations. Accommodations accomplish this objective without modifying the curriculum.**Adaptations, accommodations, and modifications need to be individualized for students, based upon their needs and their personal learning styles and interests.** It is not always obvious what adaptations, accommodations, or modifications would be beneficial for a particular student, or how changes to the curriculum, its presentation, the classroom setting, or student evaluation might be made.

3.2 Objectives

- To Learn Adaptations in inclusion
- To Learn Accomodations in Inclusive Education.
- To Learn Modification in inclusion.
- To learn specifies for children with sensory Disabilities.
- To learn specifies for Children with Motor and Multiple Disabilities.
- To learn about gifted Children.

3.3 Meaning, Difference, Need & Steps

Adaptations, accommodations, and modifications need to be individualized for students, based upon their needs and their personal learning styles and interests. It is not always obvious what adaptations, accommodations, or modifications would be beneficial for a particular student, or how changes to the curriculum, its presentation, the classroom setting, or student evaluation might be made. This page is intended to help teachers and others find information that can guide them in making appropriate changes in the classroom based on what their students need.

Some of the major issues that general education teachers may have with creating instructional accommodations and adaptations in the classroom may include the need for a starting point with examples of how to modify lesson plans for students with special needs in addition to looking at what different types of adaptations there are. Even though most pre-service teachers are taught to create lesson plans for the general education setting, it is also necessary for these teachers to be aware of how to modify

lesson plans for students with individual needs. All children do not learn the same way, therefore general education teachers need to be aware of methods they can use to alter lesson plans to benefit students with special needs. Being aware of different types of accommodations and adaptations is another important part of being a general education teacher, as these specific areas of adaptations will help teachers focus on what exactly they can change in their lesson plans to meet the specific needs of learners.

According to the **Council for Exceptional Children**, there are several **methods** that teachers can consider when creating instructional accommodations and adaptations to meet the needs of diverse learners (*Council for Exceptional Children*, 2011):

- **Altering existing materials**: Teachers can re-write, reorganize, add to, or re-cast the information so that the student can access the regular curriculum material independently. For example, teachers could prepare a study guide and audiotape for students.
- **Mediating existing materials**: Teachers can provide additional instructional support, guidance, and direction to the student in the use of the materials. Teachers can instruction to mediate the barriers presented by the materials so that one may directly lead the student to interact with the materials in different ways. For example, one might have students survey the reading material, collaboratively preview the text, and create an outline of the material to use as a study guide.
- **Selecting alternate materials**: Teachers might select new materials that are more sensitive to the needs of students with disabilities or are inherently designed to compensate for learning problems. For example, use an interactive computer program that cues critical ideas, reads text, inserts graphic organizers, defines and illustrates words, presents and reinforces learning in smaller increments, and provides more opportunities for practice and cumulative review.

The New Jersey Council on Developmental Disabilities lists nine different types of adaptations that teachers might use when addressing the needs of different learners (Curriculum modifications, n.d.):

1. **Input:** Adapting the way the instruction is delivered to the learner (such as using different visual aids).
2. **Output:** Adapting how the learner might respond to instruction (such as allowing a verbal instead of written response).

3. **Time:** Adapting the time allotted for learning, task completion, or testing (such as increasing or decreasing time given for tasks).
4. **Difficulty:** Adapting the skill level, problem type, or rules on how the learner might do the work (such as simplifying directions).
5. **Level of Support:** Increase the amount of personal assistance for a specific learner (such as assigning peer tutors).
6. **Size:** Adapting the number of items that the student will complete (such as reducing the number of answers on a multiple choice test).
7. **Degree of Participation:** Adapting how much the student will be involved in an activity (such as having the student write answers on the board).
8. **Alternate Goals:** Adapting the goals or outcomes expectations while using the same materials (such as asking the student to be able to recall book titles instead of recalling both book and author names).
9. **Substitute Curriculum:** Providing different instruction and materials to meet a learner's individual goals (such as asking a student to read the graphic novel version of a text instead of the entire novel).

3.4 Specifies for Children with Sensory Disabilities

The concept of sensorial disability embraces persons with sensory, visually , and hearing impaired; and they are so important for humans, because those are the receptors that perceive information about the world around us.

The concept of visual impairment refers to both, the blindness and other conditions of vision that do not reach it. According to the timing of deficiency, we can find blindness and visual impairment from birth and acquired, early or late; having great importance, when all this happens; because it would depend all the visual experiences, that may have been acquired before the injury.Within this category, we found visual impairment and hearing impairment.

3.4.1 Visual Impairment

Visual impairment is the lack, deficiency, or decreased vision. For many people the word blind means total lack of vision, visual impairment but is divided into total blindness or amaurosis, blindness.

Classification

Partial blindness, when the vision of the person is low or there is insufficient capacity and need to wear glasses to improve it. Macular degeneration: loss of peripheral vision and central vision is weak or a black hole.

Cataracts occur when the eye's lens becomes cloudy; it is the most common cause of low vision in old age.

Tubular or tunnel vision: it is caused by glaucoma. Damage to the optic nerve at the back of the eye leads to a gradual loss of nerve function and can cause loss of peripheral vision.

Diabetic retinopathy is a common source of low vision in middle age. Diabetes can damage blood vessels in the eye.

Blindness: means there is difficulty distinguishing between colors, especially reds and greens. Cortical blindness is caused by brain damage in the primary visual area of the occipital lobe although the visual organs are in good condition. The vision of the person is vague to light or movement.

Blindness may be caused due to same diseases like Trachoma, Glaucoma, Xeropthalmia etc. or it may cause due to some accidents or some genetic defects/chromosomal abberations. Some systemic disease like diarrhoea, blood sugar and hypertension also may cause blindness.

Lenses

Staff: used to acquire information about the road in front of the user is not detected unbalanced on hanging objects, Guide dogs, blind people can be transported with the help of a dog which has to be trained for several weeks, is very useful if you need to walk long distances. These dogs are not pets but companions; they should not pet him or take him by the collar without the permission of the owner.

Audio books

Braille: A system of touch reading and writing in which letters, words, numbers, etc. Are points that stick out of the paper. The system has 18 abbreviations, contractions calls to save space and speed up the reading or writing.

3.4.2 Children with visual in Inclusive Education

Students with visual impairments have unique educational needs which are most

effectively met using a team approach of professionals, parents and students. In order to meet their unique needs, students must have specialized services, books and materials in appropriate media (including braille), as well as specialized equipment and technology to assure equal access to the core and specialized curricula, and to enable them to most effectively compete with their peers in school and ultimately in society.

There must be a full range of program options and support services so that the Individualized Education Program (IEP) team can select the most appropriate placement in the least restrictive environment for each individual student with a visual impairment.

There must be adequate personnel preparation programs to train staff to provide specialized services which address the unique academic and non-academic curriculum needs of students with visual impairments. There must also be ongoing specialized personnel development opportunities for all staff working with these students as well as specialized parent education.

Providing equal access to all individuals with disabilities is the key element of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1992. Access involves much more than providing ramps. Access is also the key element of inclusion, which involves much more than placement in a particular setting. The relationship of access and inclusion may not be obvious to individuals who are not familiar with the educational and social impact of a vision loss. Placing a student with a visual impairment in a regular classroom does not, necessarily, provide access and the student is not, necessarily, included. A student with a visual impairment who does not have access to social and physical information because of the visual impairment, is not included, regardless of the physical setting. Students with visual impairments will not be included unless their unique educational needs for access are addressed by specially trained personnel in appropriate environments and unless these students are provided with equal access to core and specialized curricula through appropriate specialized books, materials and equipment.

3.4.3 Hearing impairment or deafness.

It refers to the individual's inability to detect or receive at least some sound frequencies which can usually be heard by members of their species, hearing loss can be classified as mild, moderate to profound.

A deaf person uses vision as the primary mode for learning and communication.

Causes of hearing loss and deafness

If one or both parents have greater risk of hearing loss the child is born deaf.

Hearing impairment is often caused by problems during pregnancy and childbirth.

Premature birth during labor conditions in which a baby does not have enough oxygen to breathe.

Rubella, syphilis or some other infections in a woman during pregnancy. Inappropriate use of toxic drugs (a group of over 130 drugs, such as the antibiotic gentamicin) during pregnancy.

Jaundice, which can damage the auditory nerve in a newborn baby.

Other causes include infections such as meningitis, measles, mumps and chronic ear infections can lead to hearing impairment.

Wax or foreign bodies blocking the ear canal can cause hearing loss at any age. Excessive noise, including working with noisy machinery, exposure to loud music or other noises such as gunfire or explosions can damage the inner ear and weak hearing. As people age, accumulated exposure to noise and other factors can lead to deafness or hearing loss.

Sensori neural hearing loss can be prevented by:

- Meningitis, immunize children against childhood diseases like measles, meningitis, rubella and mumps.
- Immunize women of childbearing age against rubella before pregnancy.
- Detection and treatment of syphilis and certain other infections in pregnant women;
- Improved prenatal and perinatal care.

3.4.4 Hearing Impaired with Inclusive Education

Inclusive Education for Hearing-impaired Children, teachers learn how to support the hearing-impaired child in a mainstream school, addressing specific needs of the hearing-impaired child including academic, social, amplification and physical needs. Teachers also gain specialised knowledge about language and listening and how they form the basis for the development of literacy and academic learning. Music forms an important part of the curriculum and the necessary information is provided to any teacher who

wishes to use music as a way to aid the language, listening and reading development in children.

- The model of inclusive education on which this programme is based, aims at including hearing-impaired learners in a mainstream school through the early identification of hearing loss and ongoing audiological management, parent guidance, speech- language therapy, development of listening skills and educational support.
- This programme is directed at mainstream educators and is also suitable for speech- language therapists, audiologists, educational psychologists, and occupational therapists with previous training in education in their undergraduate studies.
- Qualifying students are provided with applied competence in the effective inclusion of the hearing-impaired child in mainstream education. The student is equipped with knowledge of the principles and practicalities of inclusive education to optimise the education of the hearing-impaired child.
- A module is dedicated to the guidance of parents with a hearing-impaired child.

KNOWLEDGE AND PRACTICAL KNOW-HOW ARE

- the principles of inclusion and how it differs from specialised schooling and integration;
- how the ear and hearing works and the amplification technology available for hearing-impaired children;
- the application of these technologies, and trouble-shooting and assisting the hearing-impaired child in the classroom;
- language and communication development and how they lay the foundation for literacy development and academic achievement. The student is able to develop a language-development programme to enhance and encourage literacy and numeracy development. evaluating and addressing the individual needs of each child (including the hearing-impaired child) in order to support the child holistically to reach her/ his full academic potential;
- differentiated teaching methods in order to ensure full participation of the hearing-impaired learner in the school;

- working as part of an interdisciplinary team along with other team members (of which the parents form an integral part);
- the importance of parental and family involvement in the education of the hearing-impaired child. The students are equipped to guide and support and actively involve the parent in the education of the hearing-impaired child and in understanding him/her ;
- the role of the parent as part of the interdisciplinary team. The students are able to understand the need for parental involvement and also how to accommodate specific needs of each child and each family in education, the role of music in the development of language, listening and literacy skills, and are able to incorporate music and movement as part of the curriculum

1 **Inclusion: Fundamentals**

In this module students learn to understand the rationale for inclusion of the hearing-impaired child in a mainstream school. Relevancy in today's education as well as considerations based on ethical and financial implications are discussed. Students acquire knowledge on global developments in the area of inclusion and deliberate global trends in inclusion.

2 **The Ear and Hearing**

Students are provided with information in order to understand the ear in terms of the anatomy, diseases of the ear and treatment of ear pathologies. Students are made aware of the importance of hearing in the classroom and levels of impairment.

3 **Amplification Technology**

Understanding the importance and use of amplification technologies for children with hearing impairment in and out of the classroom are discussed. The module offers an in-depth knowledge of the technologies available and the working of these devices.

4 **Listening, Language and Communication Development**

Listening and language are interlinked and listening affects language development. Students learn about the effects that language development have on both literacy and numeracy development. The required interdisciplinary

teamwork to address these issues with the hearing-impaired child is discussed.

5 **Educational Practices for inclusion**

The impact of hearing impairment in classroom practice and aligning the learning environment to support the hearing-impaired child to achieve his/her potential, are covered. Evaluating the child's needs holistically in order to support the hearing-impaired child and adapting the curriculum, teaching methods and assessments to the hearing-impaired child's specific needs, are included.

6 **Parent and Family Guidance and Support**

The aim of this module is to guide and support the parent and family in all aspects of hearing impairment of their child as well as addressing the educational needs of the child. The importance of the parent or guardian as part of the interdisciplinary team working with the hearing-impaired child is stressed.

7 **Music in the Development of Language and Literacy**

The importance of music in speech, language and listening development and its effects on academic performance are clarified. The role of music in overall academic performance is explained. The effect of music in the holistic development of the child is discussed.

3.5 Specifies for Children with Neuro-Developmental Disabilities

Neurodevelopmental disorders are impairments of the growth and development of the brain or central nervous system. A narrower use of the term refers to a disorder of brain function that affects emotion, learning ability, self-control and memory and that unfolds as the individual grows. The term is sometimes erroneously used as an exclusive synonym for autism and autism spectrum disorders.

Disorders considered neurodevelopmental in origin, or that have neurodevelopmental consequences when they occur in infancy and childhood, include:

- Intellectual disability (ID) or intellectual and developmental disability (IDD)
- Autism and autism spectrum disorders such as Asperger syndrome
- Fetal alcohol spectrum disorder

- Motor disorders including developmental coordination disorder, stereotypic movement disorder and the tic disorders including Tourette syndrome.
- Traumatic brain injury (including congenital injuries such as those that cause cerebral palsy)
- Communication, speech and language disorders
- Genetic disorders, such as fragile-X syndrome
- Down syndrome
- Attention deficit hyperactivity disorder
- Mendelsohnn's syndrome
- Schizophrenia
- Schizotypal disorder
- HIV
- Malaria

Neurodevelopmental disorders are associated with widely varying degrees of difficulty which may have significant mental, emotional, physical, and economic consequences for individuals, and in turn their families and society in general.

Causes

The development of the brain is orchestrated, tightly regulated, and genetically encoded process with clear influence from the environment. This suggests that any deviation from this program early in life can result in neuro-developmental disorders and, depending on specific timing, might lead to distinct pathology later in life. Because of that, there are many causes of neuro-developmental disorder, which can range from deprivation, genetic and metabolic diseases, immune disorders, infectious diseases, nutritional factors, physical trauma, and toxic and environmental factors.

Some neuro-developmental disorders-such as autism and other pervasive developmental disorders-are considered multifactorial syndromes (with many causes but more specific neurodevelopmental manifestation)

Deprivation

Behavioral retardation, as in the reactive attachment disorders, has been observed in emotionally deprived children living with their families. However, prominent modern

thought attributes other causative mechanisms to autism and autistic spectrum disorders.

However, nurture is not the only cause of deprivation that leads to neuro-developmental sequellae. A common example of sensory deprivation due to biologic factors is blindness. Blind infants are at risk for poor developmental outcomes that if left untreated can lead to severe, autistic-like behaviors. Despite its biologic basis, caregivers can ameliorate blindness-related sensory deprivation. This can lead to positive neurodevelopmental outcome, as in the cases of author Helen Keller, who was trained in the use of tactilesign language, and musicians such as Arthel "Doc" Watson and Ray Charles who remained emotionally connected to others via their sense of hearing.

Genetic disorders

A prominent example of a genetically determined neuro-developmental disorder is Trisomy 21, also known as Down syndrome. This disorder usually results from an extra chromosome 21, although in uncommon instances it is related to other chromosomal abnormalities such as translocation of the genetic material. It is characterized by short stature, epicanthal (eyelid) folds, abnormal fingerprints, and palm prints, heart defects, poor muscle tone (delay of neurological development) and mental retardation (delay of intellectual development).

Less commonly known genetically determined neurodevelopmental disorders include Fragile X syndrome, Rett syndrome, and Williams syndrome. Fragile X syndrome was first described in 1943 by J.P. Martin and J. Bell, studying persons with family history of sex-linked "mental defects".Rett syndrome, another X-linked disorder, produces severe functional limitations. Williams syndrome is caused by small deletions of genetic material from chromosome 7.

Immune dysfunction

Immune reactions during pregnancy, both maternal and of the developing child, may produce neuro-developmental disorders. One typical immune reaction in infants and children is PANDAS, or Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infection. Another disorder is Sydenham's chorea, which results in more abnormal movements of the body and fewer psychological sequellae. Both are immune reactions against brain tissue that follow infection by Streptococcus bacteria. Susceptibility to these immune diseases may be genetically determined, so sometimes several family members may suffer from one or both of them following an epidemic of Strep infection.

Infectious diseases

number of infectious diseases can be transmitted either congenitally or in early childhood, and can cause serious neurodevelopmental disorders, such as schizophrenia. Congenital toxoplasmosis may result in formation of cysts in the brain and other organs, causing a variety of neurological deficits. Congenital syphilis may progress to neurosyphilis if it remains untreated. Measles can progress to sub acute sclerosing panencephalitis. Congenital rubella syndrome can produce schizophrenia in addition to multiple other symptoms.

Metabolic disorders

Metabolic disorders, present in either the mother or the child, can cause neurodevelopmental disorders. Two examples are diabetes mellitus (a multifactorial disorder) and phenylketonuria (an inborn error of metabolism). Many such inherited diseases may directly affect the child's metabolism and neural development but less commonly they can indirectly affect the child during gestation. (See also teratology).

In a child, type 1 diabetes can produce neurodevelopmental damage by the effects of excess or insufficient glucose. The problems continue and may worsen throughout childhood if the diabetes is not well controlled. Type 2 diabetes may be preceded in its onset by impaired cognitive functioning.

However a non-diabetic fetus can also be subjected to glucose effects if its mother has undetected gestational diabetes. Maternal diabetes causes excessive birth size, making it harder for the infant to pass through the birth canal without injury or it can directly produce early neurodevelopmental deficits. Usually the neurodevelopmental symptoms will decrease in later childhood.

Phenylketonuria, also known as PKU, is an inborn error of metabolism that can induce neurodevelopmental disorders in children. Children with PKU require a strict diet to prevent mental retardation and other disorders. In the maternal form of PKU, excessive maternal phenylalanine can be absorbed by the fetus even if the fetus has not inherited the disease. This can produce mental retardation and other disorders.

Nutrition

Nutritional deficits may cause neurodevelopmental disorders, such as spina bifida, which is common, and anencephaly, which is rare. Both disorders are neural tube defects with malformation and dysfunction of the nervous system and its supporting structures, leading to serious physical disability as well as its emotional sequellae. The most common

nutritional cause of neural tube defects is maternal deficiency of folic acid, a B vitamin usually found in fruits, vegetables, whole grains, and milk products. (Neural tube defects are also caused by medications and other environmental causes, many of which interfere with folate metabolism, thus they are considered to have multifactorial causes.) Another deficiency, iodine deficiency, produces a spectrum of neuro-developmental disorders ranging from mild emotional disturbance to severe mental retardation.

Excesses in both maternal and infant diets may cause disorders as well, with foods or food supplements proving toxic in large amounts. For instance in 1973 K.L. Jones and D.W. Smith of the University of Washington Medical School in Seattle found a pattern of "craniofacial, limb, and cardiovascular defects associated with prenatal onset growth deficiency and developmental delay" in children of alcoholic mothers. This disorder, now called fetal alcohol syndrome, has significant symptom overlap with several other entirely unrelated neurodevelopmental disorders. It has been discovered that iron supplementation in baby formula is linked to lowered I.Q. and other neurodevelopmental delays.

Trauma

Brain trauma in the developing human is a common cause (over 400,000 injuries per year in the US alone, without clear information as to how many produce developmental sequellae) of neurodevelopmental syndromes. It may be subdivided into two major categories, congenital injury (including injury resulting from otherwise uncomplicated premature birth) and injury occurring in infancy or childhood. Common causes of congenital injury are asphyxia (obstruction of the trachea), hypoxia (lack of oxygen to the brain) and the mechanical trauma of the birth process itself.

3.5.1 ASD or other neurodevelopment disorder Students in Mainstream Classrooms

For children who present at the high-functioning end of the spectrum, the classic "Asperger's kids," inclusion in a mainstream classroom is a good option. Special accommodations for children with ASD or other neurodevelopment disorder may include modifying homework and classroom assignments, providing extra time for assignments, and working with a special education specialist to devise lesson plans. Children with ASD may be taught in classrooms with a mainstream teacher who is also certified in special education.

Many students with autism or other neurodevelopment students , however, will not be able to succeed in a mainstream classroom setting. These children may have significant cognitive impairment, an extreme learning disability, or a physical disability in addition to ASD. In some cases the disorder may be so severe that the child has never learned to communicate verbally. For such children a special education classroom or institutional setting may be the only option.

Whatever early intervention therapy or teaching method is used to assist a child with ASD or others neurodevelopmental students , clear communication among parents, teachers and therapists is essential. Students on the autism spectrum lack the ability to understand how their lack of social and communication skills affects their relationship with others, and careful examination of such students' progress is necessary to make sure they are not being bullied or taken advantage of in peer interactions. Every opportunity must be made to help a child with ASD have a positive experience on which they can lay a foundation for future developmental growth.

3.6 Specifies for children with Loco-Motor & Multiple Disabilities

3.6.1 Locomotor disability:

Means a person's inability to execute distinctive activities associated with moving, both himself/herself and objects, from place to place, and such inability resulting from affliction of either bones, joints, muscles or nerves.

Main Causes

Locomotor disability may arise from the following conditions

- Cerebral Palsy
- Polio
- Amputation
- Paralysis
- Congenial Deformities

Categories of Locomotor Disability for Evaluation

Assessment of Permanent Physical Impairment of Upper Limb

The estimation is purely a measurement of functional impairment and is not expression of personal opinion.

The estimation and measurement should be made when the clinical condition has reached the stage of maximum improvement from the medical treatment. Normally the time period is to be decided by the medical doctor who is evaluating the case for issuing the PPI Certificate as per standard format of the certificate.

1. The upper limb is divided into two component parts; the arm component and the hand component.
2. Measurement of the loss of function of arm component consists of measuring the loss of motion, muscle strength and co-coordinated activities.
3. Measurement of loss of function of hand component consists of determining the prehension, sensation and strength. For estimation of prehension opposition, lateral pinch cylindrical grasp, spherical grasp and hook grasp have to be assessed as shown in Hand Component of Form A Assessment Proforma for upper extremity.
4. The impairment of the entire extremity depends on the combination of the functional impairments of both components.

Arm Component

Total value of arm component is 90%

Principles of evaluation of range of motion (ROM) of joints

1. The value of maximum ROM in the arm component is 90%
2. Each of the three joints of the arm is weighed equally (30%)

3.6.2 Multiple Disabilities

"Multiple disabilities" means concomitant impairments (such as mental retardation blindness, mental retardation-orthopedic impairment, etc.), the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one of the impairments.

Multiple disabilities is a term for a person with several disabilities, such as a sensory disability associated with a motor disability.Depending on the definition, a severe intellectual disability may be included in the term "multiple disabilities". Individual usually has more than one significant disability, such as movement difficulties, sensory loss, and/or a behavior or emotional disorder.

Characteristics

People with severe or multiple disabilities may exhibit a wide range of characteristics, depending on the combination and severity of disabilities, and the person's age. There are, however, some traits they may share, including:

Psychological

- May Feel ostracized
- Tendency to Withdraw from society
- Students with multiple disabilities may become fearful, angry, and upset in the face of forced or unexpected changes.
- May execute self-injurious behavior

Behavioral

- May display an immature behavior inconsistent with chronological age
- May exhibit an impulsive behavior and low frustration level
- May have difficulty forming interpersonal relationships
- May have limited self-care skills and independent community living skills

Physical/health

- A variety of medical problems may accompany severe disabilities. Examples include seizures, sensory loss, hydrocephalus, and scoliosis.
- May be physically clumsy and awkward
- May be unsuccessful in games involving motor skills

Challenges

Families

- A variety of medical problems may accompany severe disabilities. Examples include seizures, sensory loss, hydrocephalus,and scoliosis. Time is needed to ensure their safety at home in times of condition like seizures.
- Financially, the medical/transport fees may place burdens on the family.
- The effort needed to ensure safety of the person will require family members to take turns to look after that person.

- Individuals have only limited speech or communication
- Requires a lot of patience with individuals with multiple disabilities

Individuals

- Difficulty in basic physical mobility
- May experience fine-motor deficits that can cause penmanship problems
- May have slow clerical speed.
- May tend to forget skills through disuse
- May have trouble generalizing skills from one situation to another
- May lack high level thinking and comprehension skills
- May have poor problem-solving skills
- Ability to engage in abstract thinking is limited
- May be poor test taker due to limiting factors of the disabilities
- May have difficulty locating the direction of sound
- May have speech that is characterized by substitution, omissions
- May have difficulty learning about objects and object relationships
- May lack maturity in establishing career goals
- May face problems in socializing with peers

Accommodations/strategies

- A multi-disciplinary team consisting of the student's parents, educational specialists, and medical specialists in the areas in which the individual demonstrates problems should work together to plan and coordinate necessary services.
- Involvement of the appropriate professionals (E.g. occupational therapists, speech/ language therapist etc.)
- The arrangement of places school and homes must be easily accessible.
- Have a buddy system that ensures their needs are heard and that they get aid when needed.
- Give Simple and Specific and Systematic instructions to what you exactly want the person to do.

- Use visual aids when communicating with the child.
- Engage the child regularly in oral language activity.

3.7 Engaging Gifted / Talented Children

The term 'gifted and talented," when used with respect to students, children, or youth, means students, children, or youth who give evidence of high achievement capability in such areas as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services

There are a number of characteristics that can signal to a professional that a young child might be gifted. There are behaviours that can be observed that indicate when a child's thinking or learning is advanced. Examples include:

- early development of language
- abstract thinking
- strong memory
- a capacity to focus and concentrate on tasks of interest
- intellectual curiosity
- a strong motivation to learn.

Although development may be rapid in some areas, young gifted children have the same learning to master as all children. How they manage this learning and when these behaviours appear can be different because their cognitive development can be advanced in particular ways. For instance young gifted children may start talking earlier, or may begin at much the same age as other children but then their language development can be more rapid and they quickly become very articulate.

Young gifted children can also behave in a more sophisticated way than their peers. This can have different outcomes. For instance it could result in them taking on the role of the leader in play, or it may put them out of step with other children, making social interaction more difficult.

In many cases, where professionals and families have recognised a child's advanced development or learning and are responding in an appropriate way, it may not be useful to seek a formal identification of giftedness through assessments such as IQ tests. Formal

assessment of giftedness may be more appropriate later on, when the child is older, about to transition to school or is attending school. If the child and their family are receiving appropriate support, formal testing may not be required, particularly in the early years.

On the other hand, there are situations when formal testing is appropriate, such as when very high levels of giftedness or a learning difficulty are suspected, or if such testing is required for entry to specific programs.

Myth:

Gifted and talented children are not found in disadvantaged areas, they are products of upper, middle class or professional families.

Fact:

Gifted children occur in the same numbers in all socio-economic and cultural groups. The challenge for early childhood professionals is to be aware and know how to identify children who are gifted and talented.

Considerations in identification

In identifying giftedness and/or talent in young children, professionals should consider a number of factors that can affect the process.

- Individual assessments and observations are 'snapshots' only, and provide information about what the child can do at this time. To really identify a young gifted and/or talented child requires a collection of evidence over time.
- For various reasons, young children may not perform 'on demand', and thus not demonstrate their full potential.
- The development of young gifted and talented children can be very uneven, with peaks and troughs, stops and starts. Multiple assessments and observations over time are necessary to identify advanced development or learning.
- Where gifted and talented children also have disabilities (dual exceptionality), the disability can hide or mask the giftedness or talent. Educators should be aware that gifted and talented children can show learning that may not fit within conventional ideas about achievement.

- Cultural and other biases can interfere with a professional's ability to identify giftedness and talent in young children. Families' different cultural backgrounds can lead to a diversity of expressions of giftedness and talent, and may not fit narrow or pre-determined ideas. In some cultures, children may be discouraged from displaying their abilities.
- Stereotypes about giftedness and talent can lead to failure to identify young gifted children, particularly where the signs of giftedness are subtle. Young gifted children are not 'geniuses'. Not all gifted children are early readers or good at maths.
- Young gifted children may lack opportunity or support to demonstrate their gifted potential, or develop this potential into talent, and thus not be identified.

In the world of education, a gifted and talented child is defined as someone who has exceptional aptitude or talent in one or more areas. While some gifted children are separated from their peers and educated in special gifted and talented classrooms, others are served by getting involved in special enrichment classes and activities, either during or after school.

Recognizing a student's giftedness by pulling a student out of the general education classroom can often have negative side effects. Keeping gifted students in the classroom through a full-inclusion program, however, can negate some of those side effects. In a full-inclusion classroom, gifted students stay in the classroom with students of all abilities and the classroom instruction is differentiated, allowing gifting students to receive instruction at their level while still interacting with their peers.

Celebrating Areas of Giftedness

One of the benefits of teaching gifted children in a full-inclusion classroom is the ability to focus on their specific areas of giftedness. While some students are gifted in multiple areas, many students may only be gifted in one or two key areas. Unfortunately, when students are identified as gifted, they are often treated as if they are gifted in every area and therefore receive high-level instruction in every area, even if they are not ready for it. In a full-inclusion classroom, instruction in every subject is differentiated, allowing gifted students to work at higher-levels in areas where they are gifted and work at other levels in areas where they are not.

Positive Interaction with Peers

Being gifted is not easy. Often when gifted children are pulled out of the general education

classroom they face ridicule from their peers. While teaching gifted children in full-inclusion classrooms does not guarantee they will never be called a "nerd" or made fun of for their giftedness, it does not make their giftedness as obvious to their peers. They have the opportunity to socialize with other students their age and learn to work and interact with students of all different ability levels. In the full-inclusion classroom, every child has his/her own strengths and weaknesses.

Enhancing the Curriculum

When done effectively, full-inclusion programs have the potential to enhance the curriculum for all students, not just gifted students. Special classes and pull-out programs for gifted students typically follow a set curriculum and just work at a higher level than general education classrooms, but they do not always meet the needs of gifted students. Full-inclusion classrooms operate with differentiated instruction, allowing teachers to focus on adapting the curriculum to meet the needs of individual gifted children and all students in the classroom, thereby enhancing the curriculum and improving the instruction all students receive.

Full Inclusion Done Right

For teachers, a full-inclusion classroom full of students with learning disabilities, gifted students and those who are just average can be overwhelming. In order for full-inclusion classes to become overwhelming for gifted students, teachers must be committed to teaching gifted children and all children at their levels through differentiated instruction.

3.8 Let us Sum Up

Adaptation: all students should have equitable access to learning, opportunities for achievement and thepursuit of excellence in all aspects of their educational programs. Adaptations are teaching and assessment strategies especially designed to accommodate a student's needs so he or she can achieve the learning outcomes of the subject or course and to demonstrate mastery of concepts. Essentially, adaptations are "best practice" in teaching. A student working on learning outcomes of any grade or course level may be supported through use of adaptations.

Accommodations can help kids learn the same material and meet the same expectations as their classmates. If a student has reading issues, for example, she might listen to an audio recording of a text. There are different types of classroom accommodations,

including presentation (like listening to an audio recording of a text) and setting (like where a student sits).

Modification: Kids who are far behind their peers may need changes, or modifications, to the curriculum. For example, a student could be assigned shorter or easier reading assignments. Kids who receive modifications are not expected to learn the same material as their classmates.

In this three parts are very much important in inclusive education .

3.9 "Check your Progress"

Q. Discuss about Adaptation , Accommodations and Modifications

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1. What is Sensory Disabilities?

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2. Discuss about Neuro - Developmental Disabilities.

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3. Write a brief note on Multiple Disabilities.

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4. Who are they Gifted Children ?

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5. Make difference between multiple disability and multi sensori impartment?

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Unit - 4 ▫ Inclusive Academic Instructions

Structure

4.1 Introduction

According to Loreman and Deepeler, (2001), Inclusion means full inclusion of children with diverse abilities in all aspects of schooling that other children are able to access and enjoy. It involves regular schools and classrooms genuinely adapting and changing to meet the needs of all children, as well as celebrating and valuing differences. This definition of inclusion does not imply that children with diverse abilities will not receive specialized assistance or teaching outside of the classroom when required, but rather that this is just one of many options that are available to, and in fact required of, all children.

The history of education for persons with disabilities is a progression from segregation to integration and now to inclusion. Inclusion refers to the opportunity for persons with a disability to participate fully in all of the educational employment, consumer, recreational, community and domestic activities that typify every society (ILSMH 1994)

Inclusive education is concerned with removing all barriers to learning, and with the participation of all learners vulnerable to exclusion and marginalization. It is a strategic approach designed to facilitate learning success for all children. It addresses the common goals of decreasing and overcoming all exclusion from the human right to education, at least at the elementary level and enhancing access, participation and learning success in quality basic education for all 2000 Bulletin, UNESCO NO.32, 1998.

An ideal inclusive education concept aims at facilitating total integration of the child in the community. The upcoming inclusive education programs in India are avoiding separation of children with disabilities from their families for the purpose of education.

In India many schools are implementing the inclusive education, which also aims towards universalization of primary education of both disabled and non-disabled students.

Inclusion requires a climate of acceptance. As stated earlier, the ideal inclusive education in India would be possible only when all general education teachers are capable of serving students with special needs. In addressing the challenges of educating these children, the schools become effective schools and the teachers become effective teachers. Attitude is the basic and pervasive aspects for determining the effectiveness of inclusive education. All the research evidence point towards a considerable potential for a greater amount of cooperative work between teachers and students.

4.2 Objectives

After going through this unit you will be able to

- define universal design for learning and its implication in inclusive set up.
- explain the different co-teaching methods along with its advantages and disadvantages.
- discuss about differentiated instruction.
- state about peer mediated instructions and its types.
- explain the importance of ICT for instruction.

4.3 Universal design for learning : Multiple Means of Access, Expression, Engagement & Assessment

4.3.1 Meaning and Definition of Universal Design for learning

Universal Design for Learning is a much-touted approach to providing appropriate and accessible education to all students, including those with disabilities, in the context of the demands of the 21st Century educational environment. UDL provides a blueprint (framework) for creating flexible goals, methods, materials, and assessments that accommodate learner differences (Cast, 2002).

Universal design for learning is an approach to ensure that educational programs serve all students.

UDL definition

"the proactive design of curricula (including learning goals, instructional methods and materials, and assessments) that are accessible and usable by all students with

little or no need for additional accommodations and are compatible with available assistive technology" in Forum, June 2008

4.3.2 Universal Design in Education

The goal of education in the 21st century is not simply the mastery of content knowledge or use of new technologies. It is the mastery of the learning process. Education should help turn novice learners into expert learners—individuals who want to learn, who know how to learn strategically, and who, in their own highly individual and flexible ways, are well prepared for a lifetime of learning. Universal Design for Learning (UDL) helps educators meet this goal by providing a framework for understanding how to create curricula that meets the needs of all learners from the start.

4.3.3 Features of Universal Design for Learning

- UDL assumes a continuum of learning differences in the classroom.
- UDL relies on curriculum being presented in a flexible, engaging and challenging manner.

- UDL maintains high expectations for all students.
- UDL design for those in the margins, works better for everyone
- UDL is inclusive by design.

Inclusive Education

"The new challenge of inclusion is to create schools in which our day-to-day efforts no longer assume that a particular text, activity, or teaching mode will "work" to support any particular students' learninsg"

Ferguson, 1995

Universal Design for Learning

- **Is what?**

  A scientifically valid framework that

- **Does what?**

  Provides multiple means of access, assessment, and engagement and removes barriers in instruction

- **For what?**

  To achieve academic and behavioral success for all

4.3.4 Principle of Universal Design for Learning

Universal Design for Learning calls for

- Multiple means of access or representation, to give learners various ways of acquiring information and knowledge.
- Multiple means of action and expression, to provide learners alternatives for demonstrating what they know,
- Multiple means of engagement and assessment, to tap into learners' interests, offer appropriate challenges, and increase motivation.

Principle I: Provide Multiple Means of Representation (the "what" of learning)

Learners differ in the ways that they perceive and comprehend information that is presented to them. For example, those with sensory disabilities (e.g., blindness or deafness); learning disabilities (e.g., dyslexia); language or cultural differences, and so forth may all require different ways of approaching content. Others may simply grasp information quicker or more efficiently through visual or auditory means rather than printed text. Learning, and transfer of learning, occurs when multiple representations are used, because it allows students to make connections within, as well as between, concepts. In short, there is not one means of representation that will be optimal for all learners; providing options for representation is essential.

Principle II: Provide Multiple Means of Action and Expression (the "how" of learning)

Learners differ in the ways that they can navigate a learning environment and express what they know. For example, individuals with significant movement impairments (e.g., cerebral palsy), those who struggle with strategic and organizational abilities (executive function disorders), those who have language barriers, and so forth approach learning tasks very differently. Some may be able to express themselves well in written text but not speech, and vice versa. It should also be recognized that action and expression require a great deal of strategy, practice, and organization, and this is another area in which learners can differ. In reality, there is not one means of action and expression that will be optimal for all learners; providing options for action and expression is essential.

Principle III: Provide Multiple Means of Engagement / Assessmen (the "why" of learning)

Affect represents a crucial element to learning, and learners differ markedly in the ways in which they can be engaged or motivated to learn. There are a variety of sources that can influence individual variation in affect including neurology, culture, personal relevance, subjectivity, and background knowledge, along with a variety of other factors. Some learners are highly engaged by spontaneity and novelty while other are disengaged, even frightened, by those aspects, preferring strict routine. Some learners might like to work alone, while others prefer to work with their peers. In reality, there is

not one means of engagement that will be optimal for all learners in all contexts; providing multiple options for engagement is essential.

In UDL we are seeking to create expert learners, individuals who- whatever the particular strengths and weaknesses, know themselves, and know how to learn.

4.4 Co-Teaching Methods : One Teach One Assist, Station-Teaching, Parallel Teaching, Alternate Teaching & Team Teaching

4.4.1 Meaning of Co-Teaching

When a general education teacher and a special education teacher work together to plan and deliver instruction to a diverse population in a general education setting. It involves the distribution of responsibility among people for planning, instruction, and evaluation for a classroom of students. Another way of saying this is that co-teaching is a fun way for students to learn from two or more people who may have different ways of thinking or teaching. Some people say that co-teaching is a creative way to connect with and support others to help all children learn. Others say that co-teaching is a way to make schools more effective. A common example of co-teaching today is played out in many inclusive classrooms where a General Education teacher and a Special Education teacher share responsibility for classroom management and instruction.

Co-teaching may be defined as two or more people who agree to

1. Coordinate their work to achieve at least one common, publicly agreed-on goal.
2. Share a belief system that each of the co-teaching team members has unique and needed expertise.
3. Demonstrate parity by alternatively engaging in the dual roles of teacher and learner, expert and novice, giver and recipient of knowledge or skills.
4. Use a distributed functions theory of leadership in which the task and relationship functions of the traditional lone teacher are distributed among all co-teaching group members.
5. Use a cooperative process that includes face-to-face interaction, positive interdependence, performance, as well as monitoring and processing of interpersonal skills, and individual accountability.

4.4.2 Benefits of Co-Teaching

The benefits of co-teaching for Teachers are:

- It is easier to monitor students' behavior
- It builds relationships and opportunities for professional and/or personal growth
- It provides more support during instructional activities
- It gives support to provide students' accommodations
- It helps to receive feedback from each other
- It provides more flexible grouping
- It covers content more effectively to support mastery learning

The benefits of Co-Teaching for Students:

- It gives access to the general education curriculum
- It provides more instructional support
- It enhances learning from peers
- It provides more opportunities for social interactions
- It increase respect and understanding for all students

4.4.3. Co-Teaching Methods

Marilyn Friend and Lynne Cook (1996a) have presented different methods of co-teaching that provide ways for two teachers to work together in a classroom. They include:

4.4.3.1 One teach One Assist

4.4.3.2 Station Teaching

4.4.3.3 Parallel Teaching

4.4.3.4 Alternative Teaching

4.4.3.5 Team teaching

4.4.3.1 One teach One Assist

With this model one teacher has the primary responsibility for planning and teaching, while the other teacher moves around the classroom helping individuals and observing particular behaviors. For example, one teacher could present the lesson while the other

walks around or one teacher presents the lesson while the other distributes materials.

Some advantages of this approach are:

- Students receive individual help in a timely manner
- It's easier to keep students on task because of the proximity of the teacher.
- It saves time when distributing materials.

Some disadvantages of this approach are:

- Through the eyes of the students, one teacher has more control than the other.
- Students often relate to one person as the teacher and the other as a teacher's aide.
- Having a teacher walk around during the lesson may be distracting to some students.

4.4.3.2 Station Teaching

Both teachers divide the instructional content, and each takes responsibility for planning and teaching part of it. In station teaching, the classroom is divided into various teaching centers. Both the teachers are at particular stations; the other stations are run independently by the students or by a teacher's aide. For example, three or more science stations, each containing a different experiment, could be organized with both the teachers working with the two stations that need the most supervision. It is also possible to use an aide or parent volunteer or trainee teacher to supervise stations.

Some advantages of this approach are:

- Each teacher has a clear teaching responsibility.
- Students have the benefit of working in small groups.
- Teachers can cover more material in a shorter period of time.

Some disadvantages of this approach are:

- To work effectively, this approach requires a lot of preplanning.
- All materials must be prepared and organized in advance.
- The noise level will be at a maximum.

4.4.3.3 Parallel Teaching

In parallel teaching, both the teachers plan jointly but split the classroom in half

to teach the same information at the same time. For example, both teachers could be explaining the same math problem-solving lesson in two different parts of the room. If the room had two computers, each teacher could use a computer to model the use of the Internet or a new piece of software to half of the class. Each half of the class could be involved in a literature study group during a text study.

Some advantages of this approach are:

- Preplanning provides better teaching.
- It allows teachers to work with smaller groups.
- Each teacher has the comfort level of working separately to teach the same lesson.

Some disadvantages of this approach are:

- Both teachers need to be competent in the content so the students will learn equally.
- The pace of the lesson must be the same so they finish at the same time.
- There must be enough flexible space in the classroom to accommodate two groups.

4.4.3.4 Alternative Teaching

In alternative teaching, one teacher manages most of the class while the other teacher works with a small group inside or outside of the classroom. The small group does not have to integrate with the current lesson. For example, a teacher could take an individual student out to catch him/her up on a missed assignment. A teacher could work with an individual or a small group for assessment purposes or to teach social skills. A small group of students could work together for remedial or extended challenge work.

Some advantages of this approach are:

- Working with small groups or with individuals helps meet the personal needs of students.
- Both teachers can remain in the classroom so one teacher can informally observe the other modeling good teaching.

Some disadvantages of this approach are:

- Groups must vary with purpose and composition or the students in the group will quickly become labeled (e.g., the "smart" group).

- The students might view the teacher working with the larger group as the teacher in control.
- Noise level must be controlled if both teachers are working in the classroom.

4.4.3.5 Team Teaching

Both teachers are responsible for planning, and they share the instruction of all students. The lessons are taught by both teachers who actively engage in conversation, not lecture, to encourage discussion by students. Both teachers are actively involved in the management of the lesson and discipline. This approach can be very effective with the classroom teacher and a student teacher or two student teachers working together.

Some advantages of this approach are:

- Each teacher has an active role.
- Students view both teachers as equals.
- Both teachers are actively involved in classroom organization and management.

Some disadvantages of this approach are:

- Preplanning takes a considerable amount of time.
- Teachers' roles need to be clearly defined for shared responsibility

4.5 Differentiated Instruction : Content, Process & Product

4.5.1 Meaning of Differentiated Instruction

Differentiated instruction is an instructional theory that allows teachers to face this challenge by taking diverse student factors into account when planning and delivering instruction. Based on this theory, teachers can structure learning environments that address the variety of learning styles, interests, and abilities found within a classroom. Differentiating instruction means creating multiple paths so that students of different abilities, interest or learning needs experience equally appropriate ways to absorb, use, develop and present concepts as a part of the daily learning process. It allows students to take greater responsibility and ownership for their own learning, and provides opportunities for peer teaching and cooperative learning.

4.5.2 Four Ways to Differentiate Instruction:

Differentiation can occur in the content, process, product or environment in the classroom.

1. Differentiating the Content/Topic

Content can be described as the knowledge, skills and attitudes we want children to learn. Differentiating content requires that students are pre-tested so the teacher can identify the students who do not require direct instruction. Students demonstrating understanding of the concept can skip the instruction step and proceed to apply the concepts to the task of solving a problem. This strategy is often referred to as compacting the curriculum. Another way to differentiate content is simply to permit the apt student to accelerate their rate of progress. They can work ahead independently on some projects, i.e. they cover the content faster than their peers.

2. Differentiating the Process/Activities

Differentiating the processes means varying learning activities or strategies to provide appropriate methods for students to explore the concepts. It is important to give students alternative paths to manipulate the ideas embedded within the concept. For example students may use graphic organizers, maps, diagrams or charts to display their comprehension of concepts covered. Varying the complexity of the graphic organizer can very effectively facilitate differing levels of cognitive processing for students of differing ability.

3. Differentiating the Product

Differentiating the product means varying the complexity of the product that students create to demonstrate mastery of the concepts. Students working below grade level may have reduced performance expectations, while students above grade level may be asked to produce work that requires more complex or more advanced thinking. There are many sources of alternative product ideas available to teachers. However sometimes it is motivating for students to be offered choice of product.

4. Differentiating By Manipulating the Environment or Through Accommodating Individual Learning Styles

There has been a great deal of work on learning styles over the last 2 decades. Dunn

and Dunn focused on manipulating the school environment at about the same time as Joseph Renzulli recommended varying teaching strategies. Howard Gardner identified individual talents or aptitudes in his Multiple Intelligences theories. It has been concluded that differentiation may be done by manipulating the environment of by accommodating individual learning styles in the learning process.

4.6 Peer Mediated Instruction : Class Wide Peer Tutoring, Peer Assistged Learning Strategies

4.6.1 Meaning and Definition of Peer Mediated Instruction

Teachers in general and special education classrooms are continually faced with instructional challenges as the diversity of students in classrooms widens. Researchers and practitioners are interested in implementing best practices that improve educational outcomes for all learners. One solution to overcoming these challenges is the implementation of Peer-Mediated Instruction and Intervention (PMII). Peer-mediated instruction is a widely applied and researched educational intervention in both general and special education settings.

Peer-Mediated Instruction and Intervention is an alternative classroom arrangement in which students take an instructional role with classmates or other students. Many approaches have been developed in which students work in pairs (dyads) or small cooperative learning groups. To be most effective, students must be taught roles in the instructional episode; to be systematic, elicit responses, and provide feedback. Research supports the use of these approaches as alternative practice activities, however, does not condone the use of peers for providing instruction in "new" instructional content.

Myreddi, V, Goodlad and Hirst, 1989 described peer tutoring or peer mediated instruction as *"The system of instruction in which learners help each other and learn by teaching."* Probably the most succinct definition of peer tutoring comes from Damon and Pheleps *"Peer tutoring is an approach in which one child instructs another child on material on which the first is an expert and the second is novice.*

4.6.2 Advantages of Peer Mediated Instruction

Peer mediated instruction has been a favoured practice in inclusive setting due to its potential advantages. Peer mediated instruction benefits children with special needs and all other children. It has the potential to deliver many of the benefits normally

associated with expert tutoring by teachers. If teachers organize the contents of the program peer tutors can provide appropriate activities tailored to meet the individual needs of children with special needs. They can ensure a high level of tutee participation in the learning process, and individual guidance and personal care can be provided.

Peer mediated instruction normally promotes healthy social relationships between students with special needs and their peer tutors. It also encourages positive interaction between regular class students and those with special needs, and allows individuals to work together in cooperative work environments. Peer mediated instruction encourages close personal relationships, personal interdependence and shared responsibility for learning outcomes.

Peer mediated instruction reduces deficiencies in children with special needs and such children are active and participate in many regular class activities.

4.6.3 Types of Peer Mediated Instruction

Ryan, Reid, and Epstein (2004), has summarized some peer tutoring formats, which are commonly in practice. These formats are as follows:

4.6.3.1 Class wide Peer Tutoring (CWPT): In this format of peer tutoring entire class participates in tutoring dyads. During each tutoring session students can participate as both Peer Tutor and tutees, or they can participate as only the tutor or the tutee. Class wide Peer Tutoring is a variation of peer-mediated instruction that has been used in elementary, middle school, and high school classrooms. In CWPT students form pairs and take turns in the roles of tutor and student.

The CWPT program was originally developed and used with special education students in their mainstream classrooms. It was very evident early on that the procedures were not only effective for the targeted students, but for the entire classroom of students regardless of their ability levels. Thus, CWPT has been researched and proven effective with the following student populations:

- Students with special needs
- Educationally labeled students
- Students at risk of school failure
- Students who are culturally and linguistically diverse

- Students with ADD and ADHD
- Students from pre-school to high school age levels and beyond

4.6.3.2 Peer Assisted Learning Strategies

It is a modified version of CWPT developed by Fuchs et al (1997) where teachers identify the children who require help in specific skills and the most appropriate children to help them learn those skills. Pairs are changed regularly, and over time as student work on a variety of skills all students have the opportunity to be "coaches" and "players". Pupils are divided into higher ability and lower ability pairings.

It's a version of classwide peer tutoring where teachers evaluate and identify students who need help with specific skills and determine the most appropriate students in the class to assist them with those skills. The students are paired as "coaches" and "players" but rotate roles as activities change and students are required to work on a variety of skills.

PALS is designed to complement, not replace, the existing math or reading curriculum by providing opportunities for students to practice what the teacher has taught. Research supports that the use of pairs in the classroom provides more focus on individual student needs rather than a teacher-directed activity that may address the needs of a few students but not be able to meet the needs of all student.

Peer-Assisted Learning Strategies (PALS) is a supplemental peer-tutoring program in which student pairs perform a structured set of activities in reading or math (PALS Reading and PALS Math, respectively The designation of tutoring pairs and skill assignment is based on teacher judgment of student needs and abilities, and teachers reassign tutoring pairs regularly.

Although PALS is for students with diverse academic needs, this intervention report focuses on the use of PALS to improve the reading and mathematics skills of students with learning disabilities.

Some benefits attributed to the PALS program include:

- Actively involves all students in tasks they can perform successfully.
- Increases student opportunity to read and practice basic math skills.
- Motivates students to do better in reading and math.
- Expands instructional resources in the classroom.

- Provides for positive and productive peer interaction.
- Creates opportunity for lower functioning students to assume an integral role in a valued activity.
- Allows students with disabilities to spend more time in least restrictive environment and increases their access to the general education curriculum.
- Helps teachers accommodate academic diversity.
- Accelerates student achievement in reading and math.
- Is affordable and easily implemented.
- Is found to be an enjoyable activity by teachers and students.

4.7 ICT for Instructions

4.7.1 Meaning of ICT and its Application in Education.

Educational systems around the world are under increasing pressure to use the new information and communication technologies (ICTs) to teach students the knowledge and skills they need in the 21st century. The 1998 UNESCO World Education Report, Teachers and Teaching in a Changing World, describes the radical implications the new information and communication technologies have for conventional teaching and learning. It predicts the transformation of the teaching-learning process and the way teachers and learners gain access to knowledge and information.

The use of computer based technology has become the need of the day due to different reasons. The technological advancement has brought the use of sophisticated hardware and software like radio, television, tape recorder, films, and transparency in the field of education. The professionals/teachers of today employ numerous information communication technology (ICT) supported methods and materials in the classroom to enhance the teaching-learning process in a more effective way. As we are entering into the era of inclusion and as it has become the fundamental right of each child to be educated, children with disabilities are being enrolled in the regular schools through the centrally sponsored scheme of the Government of India called Sarva Shiksha Abhiyan. Since, the professionals/teachers in the regular schools lag in the skills to teach the children with special needs, the knowledge about the ICT supported teaching methods

for the disabled children would be of great boon to them to handle the entire class without any discrimination.

Inclusive education is a strategy based on human rights and democratic principles that confronts all forms of discrimination. Inclusive education is concerned with removing all barriers to learning, and with the participation of all learners vulnerable to exclusion and marginalization. It is a strategic approach designed to facilitate learning success for all children. Hence, it becomes the duty of a regular teacher to handle children with special needs along with normal children in his/her classroom.

So the ICT that he uses should also meet the diverse needs of children with disabilities such as children with learning disabilities, mild intellectual disability, autism, hearing impairment and visual impairment.

4.7.2 ICT in educating children with special needs

Educating all students by today's standards and for tomorrow's living most certainly includes the use of technology. Its relationship to providing essential supports for students with disabilities in areas of self-care, education, employment, recreation/leisure, and community living are readily accepted. Additionally, access to technology can provide meaningful learning experiences to develop problem solving and higher order thinking skills and to function in the world beyond the classroom. The appropriate and successful integration of technology into learning environments has the potential to benefit all students. As states and schools work to implement the requirements of educational reform required by the No Child Left Behind Act, 2001, they must ensure that all students are included, in particular students with disabilities.

Specifically, technology assists students with disabilities to:

(a) Maximize independence in academic and employment tasks;

(b) Participate in classroom discussion;

(c) Gain access to peers, mentors, and role models;

(d) Self-advocate;

(e) Gain access to the full range of educational options;

(f) Participate in experiences not otherwise possible;

(g) Succeed in work-based learning experiences;

(h) Secure high levels of independent learning;

(i) Prepare for transitions to college and careers;

(j) Work side-by-side with peers;

(k) Master academic tasks that they cannot accomplish otherwise;

(l) Enter high-tech career fields; and

(m) Participate in community and recreational activities

"Inclusive education according to UNESCO means that the school can provide a good education to all pupils irrespective of their varying abilities. All children will be treated with respect and ensured equal opportunities to learn together. Inclusive education is an on-going process. Teachers must work actively and deliberately to reach its goals".

4.7.3 Why Students Prefer ICT Activities Over Conventional Learning?

The following is the list of qualities derived by students favoring ICT activities over conventional learning. These student preferences also contribute to our understanding of why ICT enhances achievement, as because ICT;

- is infinitely patient
- never gets tired
- never gets frustrated or angry
- allows students to work privately
- never forgets to correct or praise
- is fun and entertaining
- helps individualized learning mode
- is self-paced
- does not embarrass students who make mistakes
- makes it possible to experiment with different options
- gives immediate feedback
- is more objective than teachers
- gives more meaningful contact with students than teachers

- is impartial to race or ethnicity
- is great motivator
- gives a sense of control over learning
- is excellent for drill and practice
- calls for using sight, hearing, and touch
- teaches in small increments
- help students improve their spelling
- builds proficiency in computer use, which will be valuable later in life
- eliminates the drudgery of practices certain learning activities by hand (e.g., drawing graphs)
- works rapidly-closer to the rate of human thought.

4.7.4 ICT and Inclusive Education

Inclusion should, then, be regarded as a long-lasting process which requires time, effort, competence and strong conviction by all those involved in students' education, first and foremost, by teachers. The key role of teachers in giving birth to and maintaining a truly inclusive classroom is unquestionable (Anderson et al, 2007), but such an important mission also requires that suitable, effective and barrier-free educational means should be employed. From this perspective, ICT resources are promising; there are grounds for maintaining that they help most students overcome barriers to learning, thus increasing their school achievement, together with their autonomy, willingness and self esteem. Indeed, educational research provides strong evidence that: "ICT is both a medium and a powerful tool in supporting inclusive practice. It provides wide-ranging support for communication, assisting many learners to engage with learning, including those who are hard to reach, and helps to break down some of the barriers that lead to under-achievement and educational exclusion" (Becta, 2007).

4.8 Let us Sum Up

- The Indian Education Commission (1964-66): The Indian Education Commission was the first statutory body to suggest that the education of handicapped children

has to be organized not merely on humanitarian grounds, but also on grounds of utility. The Commission observed that although the Indian Constitution had issued specific directives about compulsory education for all, including children with disabilities, very little had been done in this regard. The Commission also emphasized that the education of children with disabilities should be "an inseparable part of the general education system."

- The main elements of inclusive education are:
- A human rights issue ("Education for all" means all children, not almost all).
- Education for all in school for all disabled and non- disabled children learning to live together.
- Togetherness "enabling all to participate together in society from the beginning: contributing to social harmony and stimulating the building of relationship among individuals groups and nations.
- Breaking barriers "familiarity and tolerance for prejudices and rejection.
- The goal of education in the 21st century is not simply the mastery of content knowledge or use of new technologies. It is the mastery of the learning process. Education should help turn novice learners into expert learners—individuals who want to learn, who know how to learn strategically, and who, in their own highly individual and flexible ways, are well prepared for a lifetime of learning.
- Co-Teaching Strategies

Strategy	Definition/Example
One Teach, One Assist	One teacher has primary instructional responsibility while the other assists students with their work, monitors behaviors, or corrects assignments.
Station Teaching	The co-teaching pair divides the instructional content into parts – Each teacher instructs one of the groups, groups then rotate or spend a designated amount of time at each station – often an independent station will be used along with the teacher led stations.

Parallel Teaching	Each teacher instructs half the students. The two teachers are addressing the same instructional material and presenting the material using the same teaching strategy. The greatest benefit to this approach is the reduction of student to teacher ratio.
Alternative (Differentiated)	Alternative teaching strategies provide two different approaches to teaching the same information. The learning outcome is the same for all students however the avenue for getting there is different.
Team Teaching	Well planned, team taught lessons, exhibit an invisible flow of instruction with no prescribed division of authority. Using a team teaching strategy, both teachers are actively involved in the lesson. From a students' perspective, there is no clearly defined leader – as both teachers share the instruction, are free to interject information, and available to assist students and answer questions.

- Differentiating instruction means creating multiple paths so that students of different abilities, interest or learning needs experience equally appropriate ways to absorb, use, develop and present concepts as a part of the daily learning process. It allows students to take greater responsibility and ownership for their own learning, and provides opportunities for peer teaching and cooperative learning.
- Peer tutoring programs represent a viable means of improving the curricular and social interaction skills of students with autism (Odom et al., 1999). Research reveals that the **teaching of specific tutoring strategies facilitates interaction between children with autism and their socially competent peers**. Studies indicate that effects of social initiation intervention are immediately evident and substantial (Odom, McConnell, McEvoy, Peterson, Ostrosky, Chandler, et al., 1999).

- Peer Mediated Instruction and Intervention
    - Students taught roles
    - Students instruct
    - Teachers monitor/facilitate
    - Academic and social goals
- Class-Wide Peer Tutoring
    - Teams of dyads within the classroom environment
    - Highly structured teaching procedures
    - Daily point earning/public posting of points
    - Direct practice of academic skills
- Peer-Assisted Learning Strategies (PALS) is a class wide peer tutoring program. Teachers carefully partner a student with a classmate. The pair works on various activities that address the academic needs of both students. Pairs change over time. PALS can be used across content areas. The strategy provides direct opportunities for a teacher to circulate in the class, observe students, and offer individual remediation. PALS therefore allows for differentiated instruction via having partners work simultaneously on various teacher-directed activities.
- The meaning of technology-based interventions in education is subject to multiple interpretations. Over the last forty years, technology-based intervention introduced into the classroom have included television, the use of film projectors and educational films, videotapes and videodisks, and the use of stand-alone and networked computers and data terminals. For all practical purposes in today's classroom, the term "technology-based interventions" mean the utilization of computers to both deliver instruction and to enable student learning (Ringstaff & Kelley, 2002).
- In the 2003 Daniel K. Davis, Michael Wehmeyer and Steven E. Stock in their study on the utilization of Computer Technology to facilitate Money Management by Individuals with Mental Retardation yielded the result which indicated that the use of a money management software programme can be an effective tool to enable people with mental retardation to perform financial management tasks more independently.

4.9 "Check Your Progress"

1. What is Universal Design for Learning? Discuss its importance in relevance to inclusive education.
2. Briefly discuss about peer tutoring and its types with examples.
3. How does technology influence education in an inclusive setup?
4. Enumerate the different co teaching methods with examples.

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Unit - 5 ❑ Support and Collaborations for Inclusive Education

Structure

5.1 Introduction

Although the concept of inclusive education has been promoted internationally for more than a decade, multiple barriers remain to the full participation of children with disabilities in education. Lack of information, combined with discriminatory attitudes towards persons with disabilities at all levels of society, contributes to the continued neglect of their right to education. This partly explains the minimal rate of progress that has been made towards the enrolment and participation in the education process of children with disabilities. The factors are complex and extend beyond the boundaries of the school and classroom. It is conservatively estimated that less than 10 per cent of children with disabilities in developing countries in the Asia-Pacific region are in school.

The title of the flagship, the "Right to Education for Persons with Disabilities Towards Inclusion" reflects the current situation in which there is a movement towards inclusive education throughout the world. All children have the right to education. The equal right for children with disabilities has been clearly mandated but the right is not being comprehensively upheld. The growing trend towards more flexible, relevant and responsive education has been promoted 1990. The Salamanca Statement provided a vision of an inclusive system of education which would play a role beyond the school and would contribute to the building of inclusive and non-discriminatory societies. Inclusive schools would benefit all children as they developed ways of teaching that respond to individual differences and diverse abilities. In addition, they would be cost-effective, removing the need for separate schools systems for children with disabilities. In spite of the clear advantages of inclusive education, the data on the number of children with disabilities not in school suggests that the process is unacceptably slow and many of the most significant barriers that remain are not able to be solved at the level of the individual teacher or the individual school.

Inclusive education aims to provide quality education for all learners. In order to achieve an inclusive school, support is needed from the entire community: from decision-makers to end-users (learners and their families). Collaboration is required at all levels and all stakeholders need a vision of long-term outcomes – the type of young people the school and the community will 'produce'. Changes in terminology, attitudes and values, reflecting the added value of diversity and equal participation, are needed.

In order for teachers and other education professionals to be prepared for inclusion, changes are needed in all training aspects – training programmes, daily practices, recruitment, finances, etc. The next generation of teachers and education professionals must be prepared to be teachers/trainers for all learners; they need to be trained not just in terms of competences but also of ethical values.

5.2 Objectives

After going through this unit you will be able to

- discuss about the role of different stake holders of inclusive education.
- explain the importance of advocacy and leadership.
- discuss about family and community support in inclusive education.
- state about the meaning and importance of resource mobilization.

5.3 Stakeholders of Inclusive Education and their Responsibilities

5.3.1 Who are the stakeholders of Inclusive Education?

Inclusive education is a process of addressing and responding to the diverse needs of all learners by reducing barriers to, and within, the learning environment. The overall goal of inclusive education, is thus the realization of a school (or any organized educational provision) where all learners are participating and treated equally, and which also proactively seeks and reaches out to any learner who is left behind.' – *Salamanca World Conference on Special Needs Education (1994)*

To make inclusive education a reality, a number of pieces in the system have to fall in place. It is true that the Government of India has made a significant fund allocation to achieve 'Education for all' through SSA. But to make it happen we need to have the stakeholders suitably prepared and involved. Some of the stakeholders include the regular teachers, special/resource teachers, school administrators, parents of children with special needs and parents of their peers who may not have special needs, children themselves with special needs, and those without special needs. In short, all sections of society who have a stake – directly and indirectly – in children's education.

The success of inclusion lies in the coordinated and collaborative efforts of all of the stakeholders.

5.3.2 Roles and responsibilities of Stake holders

(a) Special Educators

With inclusive education initiated as a major step, a changing role of special educators is seen to be emerging. The educational programmes of special educators approved by the Rehabilitation Council of India (RCI) prepare the special educators to become special teachers to cater to the needs of children with special needs in special schools. SSA has opened doors for them to be resource teachers in the inclusive education settings, where they are expected to visit regular schools periodically and function as partners to the regular educators in meeting the needs of children who have special needs. A short-term in-service programme may prepare them with updated techniques, which can be offered by the Continuous Rehabilitation Education (CRE) programmes of RCI.

(b) Resource Teachers and Regular Teachers

In inclusive schools, though the responsibility of education of all children lies with the regular teacher, the resource teachers are expected to facilitate inclusive education by supporting the children and the teachers in regular schools. It is essential that both the resource teachers and regular teachers are prepared suitably to have a smooth, seamless inclusion.

(c) Children with Special Needs and their Peers

Children with disabilities and their peer group without special needs are to be prepared for inclusion so that the experience is not overwhelming for either of them. Children with special needs who are used to a protective environment with small class strength of 8 to 10 children may be shocked when placed in a large class of 40 children. And those children who have not seen a child with a disability can react to the situation with varied emotional and behavioural responses ranging from pity and sympathy to bullying and making fun of their peers with special needs.

(d) Parents of children with and without disabilities

Parents also can have apprehensions if not suitably prepared. Parents of a child with disability may prefer the protective special class to the large regular class where their

child may not get attention from the teacher. There have been occasions where the parents of a child without any special needs were afraid that their child might 'behave' in an odd manner by being with children with special needs. These are but a few examples of the many issues related to inclusion that needs to be addressed, so that inclusion is realized in its true sense.

(e) School Administrators

The school administrators are another important component to make inclusion a success. Accessibility to classrooms by providing ramps for wheelchair users, having brightly lit and ventilated classrooms so that children who cannot hear can see the teacher clearly when she talks and the children with low vision will be able to see better, having curtains in class so that a child with attention deficit does not get distracted and look outside while the teacher is teaching. All these are the responsibility of the school administrator, so that accessibility and barrier free environment is ensured. More importantly, the attitude of the administrator will impact the other stakeholders. Therefore, by ensuring that the administrators have a positive attitude towards inclusion, a major milestone towards successful inclusion can be achieved.

(f) Government of India and State Governments

The Government of India has taken a major step towards inclusive education. To make it a success, all the stakeholders need to do their best so that inclusive education will be achieved in its true sense. After all, it is the right of the child to get the best education. Let us make it happen and bring out the maximum potential in every child – the future leaders of our nation!

Governments should work in close cooperation with non-governmental organizations which are providing education to children with disabilities and developing strategies to include them in regular community schools, with a view to learning from these processes and including them in the national education system. Governments should consult with organizations of persons with disabilities and parents of children with disabilities, in the development of policies and changes to the school system, to ensure that these children are included in regular community schools and that their needs met.

(g) School and Community

Non-governmental organizations should engage with ministry of education officials to ensure that they are aware of, and participating in, the non-government projects on including children with disabilities in education. Disabled peoples' organizations should advocate to ministry of education officials to fulfill the right to the education of children with disabilities by including them in national education policies and schools. Parents should advocate for the inclusion of their children in local community schools within the national education system.

5.4 Advocacy and Leadership for Inclusion in Education

5.4.1 Advocacy for Inclusion in Education

Advocacy by organizations of parents of children with disabilities, and by organizations of people with disabilities is a very important mechanism for changing the education system to make it more willing and more capable of including children with disabilities in schools and making sure that the schools meet their educational needs. In many countries where special schools have been established, they were started by organizations of parents working in partnership with non-governmental organizations. In other countries they have been instrumental in encouraging governments to include children with disabilities in regular pre-schools, primary schools, secondary schools and universities.

The Biwako Millennium Framework has identified the strengthening of self-help organizations of persons with disabilities and related family and parent associations as the first priority for the second decade of disabled persons. It states that they are the "most qualified and best equipped to support, inform and advocate for themselves and other persons with disabilities." This includes children with disabilities.

Advocacy for Inclusion believes that children who have a disability should have an inclusive education of their choosing in the same way that choices are available to students in the broader community. School communities must be inclusive of all children, and openly recognize the unique contributions that children who have a disability make to community life. It is essential that an inclusive education be supported to maintain and strengthen the personal relationships and social networks of children who have a disability. Each child's support must be individualized and

flexible, while remaining relevant to their particular needs at the time.

Advocacy involves participation in the policy-making process, and raising public awareness and support to shift the balance of power and bring about change. It is a long-term, cyclical process that:

- has measurable, achievable, realistic and time bound goals
- addresses the right audience, using appropriate information, and transmits a clear message
- builds coalitions and raises local funds.

To realize inclusive education, different actors must be addressed, e.g. Government, district authorities, international organizations, community leaders, school boards, teachers, parents, and children.

5.4.2 Leadership for Inclusion in Education

For inclusive education to succeed, administrators must take action to publicly articulate the new vision, build consensus for the vision, and lead all stakeholders to active involvement. Administrators can provide four types of support identified as important by special educators: personal and emotional (for example, being willing to listen to concerns); informational (for example, providing training and technical assistance); instrumental (for example, creating time for teachers to meet); and appraisal (for example, giving constructive feedback related to implementation of new practices) (Littrell, Billingsley, & Cross, 1994).

Visionary leaders recognize that changing any organization, including a school, is a complex act. They know that organizational transformation requires ongoing attention to consensus building for the inclusive vision. It also requires skill development on the part of educators and everyone involved in the change; the provision of extra common planning time and fiscal, human, technological, and organizational resources to motivate experimentation with new practices; and the collaborative development and communication of a well-formulated plan of action for transforming the culture and practice of a school (Ambrose, 1987; Villa & Thousand, in press).

Inclusion is increasingly understood as an educational reform that responds to the diversity of all learners, challenging the marginalization, exclusion and underachievement which may result from all forms of 'difference'. Leadership for

inclusion is conceptualized here as driving a constant struggle to create shared meanings of inclusion and to build collaborative practice, an effort that needs to be rooted in critical practice.

5.5 Family Support and Involvement for Education

5.5.1 Families – The Cornerstone of the Society

The history of progress and of systems change for individuals with disabilities show us that positive changes have come from the work, tenacity and the vision of families. It has been years of struggle, of strong vision or creative thinking and strong social powers that have created the awareness of disability as a human right issue and children with special needs are valued as fellow citizens in the communities in which we live. It is always fascinating to reflect as to how families kept that vision despite horrific histories and practices in almost all countries over the years.

Gandhi said that "we must be the change we want to see". Families having children with disabilities play a dual role, we bring up one child to live in a community and we raise the community to welcome our children.

Families have a right to be involved in their child's education and to participate with the school in decisions concerning their child and the school community. Extensive research has shown the benefits of parental involvement in education. These benefits include higher achievement, better attendance, more positive attitudes and behaviours and higher graduation rates. Moreover, schools that work well with families show improved teacher morale, and are seen by the community to be performing better than those that do not.

5.5.2 Rationale for Family Support and Involvement

Many reasons can be given for encouraging family involvement in their children's education and intervention program. When we talk about families we usually mean parents. However it is important to consider the needs of other family members in adapting to child with special needs and providing them equal opportunities which a child without disabilities enjoys.

- Parents and immediate family members are the major socializing agents for their child, the primary transmitter of cultural values, beliefs and traditions.
- Children with disabilities acquire developmental skills more quickly when

family members participate in home teaching.

- Involvement in intervention program offers parents access to support from other parents and a better perspective on their own child's strengths and needs.
- Consistency of adults' expectations can be maintained young children become anxious when adults do not agree on expectations.
- Parents know their child better than teachers or clinicians thus parents are a source of unique information.
- Family members can help the child transfer learning from school to home and neighborhood.
- Only a few hours a day are spending in school, many more hours are spending at home with family.

5.5.3 Examples of Parent Organizations in India

- Parivaar-Bengal, part of Parivaar (National Confederation of Parents Organisations) has empowered parents in the districts of West Bengal
- Mentaid – Self advocacy for young adults with intellectual and developmental disability

5.6 Community involvement for inclusion

5.6.1 Involving Community for Inclusion

Societies respond differently to the provision of services such as education, health, transport, employment, and rehabilitation for persons with disabilities. Accessibility to services by persons with disabilities continues to be a major challenge in all parts of the world, but especially in developing countries. However, many countries have realized the advantages of including persons with disabilities in all development activities. Policies have been adapted to safeguard and improve their lives, and programmes such as Community Based Rehabilitation (CBR) and Inclusive Education (IE) have been put in place. The overall aim of these programmes, is to develop the potential of persons with disabilities and for them to become productive citizens in the community and get equal opportunities.

5.6.2 Utilizing the Community

Inclusive education recognizes that the whole community needs to be involved in

order to ensure that ALL children receive the education that is their basic human right. This means that we have to think about who is in our communities and how they can support the process of inclusive education. The following are a part of the community:

- Parents and family members
- Teachers, principals, school boards, school review officers
- Local leaders – church, community leaders, women's committees, youth groups, etc.
- Local health workers
- Local business – shopkeepers, bus drivers
- Local sports groups
- Local parent groups and disabled people's organizations

Schools can use their community to assist by helping with fundraising, providing parent-to-parent support, helping with transport, counseling, being an assistant/helper to the teacher, teaching cultural skills (weaving, cooking), helping identify students not in school, promoting public awareness, and helping with school supplies. Churches can include ALL children in Sunday school and youth groups. Nurses/health workers provide parents with knowledge, and can help find children who do not attend school. Members of disability-related organizations can give talks to schools, raise public awareness and suggest ways to include children

5.7 Resource Mobilisation for Inclusive Education

5.7.1 Resource Mobilization: Importance

Inclusive Education requires policy action at both the national and local level. At the national level, the government must implement the passage of new laws mandating inclusive education, while at the local level schools and the community must participate in capacity building, resource mobilization, and generating knowledge.

Resource mobilization is imperative for the success of IE. Resources play a significant role in enabling provision of IE services in the country. IE services require specialized human, materials and physical resources.

The government is providing required specialized teaching staff. Learners with special needs and disabilities require more and specialized material resources for their education than their non-disabled peers. Material resources are needed at both the

individual level and school level. The nature and type of materials required depend on the type and degree of disability. The physical environment where learners with special needs and disabilities operate should be accessible to them and be disability friendly. This calls for adequate allocation of material resources to learning institutions to improve physical structures and provide individual learners with special needs and disabilities with basic learning aids.

5.7.2 Methods of Resource Mobilization

Financing and support of educational services for students with special needs is a primary concern for all countries, regardless of available resources. Yet, a growing body of research asserts that Inclusive Education is not only cost-efficient, but also cost-effective and that "equity is the way to excellence" (Skrtic, 1991, OECD, 1999)

(a) Governmental Funding Formulas

Across countries, the issue of resources appears not so much as an issue of levels of funding, as it is an issue of distribution and allocation of funds. Specifically, fiscal policies and their built-in incentives (or disincentives) for IE "may be as important in affecting program provision as the amounts allocated" (Parrish, 2002).

Many parents cannot afford assistive and functional devices needed by learners with special needs and disabilities as they are expensive and out of reach. The government is providing basic learning aids: though provision of assistive/functional devices is still a constraint due to inadequate resources and funding. These will be supplemented by other service providers, which include individuals, faith based organizations, civil society organizations, the corporate sector, bilateral and multilateral agencies.

(b) Pupil Bound Budget System

Sometimes mainstream schools are eager to have these children (and their budgets) within their walls. However, it is likely that they prefer children (with budgets) who do not cause them too much additional work. Also, parents will always try to get the best for their child and as a result will try to get the highest amounts of special needs funding.

This pupil bound budget system is certainly not advisable for children with milder special needs. Criteria for learning disabilities are vague, ambiguous and change over time and this in itself may be a source of debate if budgets are linked to children. In practice, only clear-cut criteria are useful if funds are tied to children. If it is not possible to develop these, pupil bound budgets should not be used.

Generally it is desirable that funds are spent on special education itself (in an inclusive setting), instead of on bureaucratic procedures like diagnosis, categorization, appeals and litigation.

(c) Decentralized Model

Inclusion can be achieved more easily in a decentralized model when compared to a central approach. In a centrally prescribed plan too much emphasis may be put on the organizational characteristics of that specific model without inclusionary practice being realized. Local organizations with some autonomy may be better equipped to change the system. Therefore, a decentralized model is likely to be more cost-effective and provide less opportunity for undesirable forms of strategic behavior. Nevertheless, the central government has to clearly specify which goals must be achieved. Decisions concerning the way in which such goals are to be achieved is then left to local organizations.

5.8 Let us Sum Up

1. Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Education shall be directed to the full development of human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace." (art.26 - Universal Declaration of Human Rights)

2. While there are also very important human, economic, social and political reasons for pursuing a policy and approach of inclusive education, it is also a means of bringing about personal development and building relationships among individuals, groups and nations.

It is thus imperative that schools and local authorities take the responsibility to ensure that this right is implemented. Concretely this involves:

- Initiating debates around how the community understands human rights;
- Generating collective thinking and identifying practical solutions such as how human rights can be made part of the local school curriculum;
- Linking the Human Rights movement with educational access;

- Fostering grassroots action and strengthening its ties to the policy level in order to promote protection;
- Encouraging the creation of community and children's councils where issues of access can be discussed; and

Developing community-school mechanism to identify children not in school as well as develop activities to ensure that children enroll in school and learn.

3. Inclusion is seen as a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities, and reducing exclusion within and from education. It involves changes and modifications in content, approaches, structures and strategies, with a common vision which covers all children of the appropriate age range and a conviction that it is the responsibility of the regular system to educate all children.

4. An important concern in a decentralized system is the issue of accountability. Clients of the education system and taxpayers in general have a right to know how funds are spent and to what end. Accordingly, some kind of monitoring, inspection and evaluation procedures will be inevitable elements of the funding system. The need for monitoring and evaluation is even greater in a decentralized model compared to more centralized options. Independent evaluation of the quality of education for children with special needs is therefore part of such a model.

5. Inclusion Support Agencies (ISA) are responsible for managing and coordinating access to quality inclusion support that is relevant, appropriate and timely for all eligible education and care services within a defined region. ISAs employ Inclusion Support Facilitators (ISFs) who work directly with educators and staff in education and care services. ISFs provide practical advice and facilitate access to a range of supports designed to strengthen the service's ability to create an inclusive environment for all children.

5.9 "Check Your Progress"

1. Discuss about the different stakeholders in inclusive education and their responsibilities.

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2. Write a note on Resource Mobilization for Inclusive education.

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3. How does community influence education in an inclusive setup?

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4. Enumerate the role of parents in inclusive education.

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Unit - 6 □ Policies & Frameworks Facilitating Inclusive Education

Structure

6.1 Introduction

The emphasis on Human Rights Education began in 1995 with the beginning of the UN Decade for Human Rights Education.In 1953 with the UNESCO Associated Schools Programserved as an "initial attempt to teach human rights in formal school settings". The first formal request for the need to educate students about human rights came about in UNESCO's 1974 article Recommendation. It was concerning about Education for International Understanding, Cooperation and Peace, and Education Relating to Human Rights and Fundamental Freedoms. The participants of the International Congress on the Teaching of Humans Rights eventually met in 1978 to form a specific definition of what would be required application of the education in formal curricula. The aims at which the Congress agreed upon including the encouragement of tolerant attitudes with focus on respect, providing knowledge of human rights in the context of national and international dimensions as well as their implementations finally the develop the awareness of human the congress wanted to rights translating into reality whether social or political on national and international levels.

Human Rights Education became an official central concern internationally after the World Conference on Human Rights in 1993. This conference brought the issue of formal education to the top of many countries priority lists which was brought to the attention of the United Nations. It was two years later that the United Nations approved the Decade for Human Rights Education, which reformed the aims of application once again. Since the development of the UN Decade, the incorporation of human rights education into formal school curricula has been developed and diversified with the assistance of nongovernmental organizations, intergovernmental organizatioı s, and individuals dedicated to spreading the topic through formal education.

Today the most influential document has been used to determine what qualifies as human rights and how to implement these ideas and rights into everyday's life in the Universal Declaration. This declaration was adopted by the General Assembly in 1948, making December 10th annual Human Rights Day ever since. To this day the 30 article compilation is seen as "a common standard of achievement for all peoples and all nations"

6.2 Objectives

- ✓ To gain an understanding regarding International declaration of inclusive Education
- ✓ To know about various International Conventions on Inclusive Education
- ✓ To understand different International Frameworks pertaining to Inclusive education
- ✓ To delineate national Commission & policies.
- ✓ To comprehend the various act and programmes reflecting inclusive

6.3 International Declarations:

6.3.1 Universal Declaration of Human Rights

The Universal Declaration of Human Rights (1948) was drafted by the UN Commission on Human Rights in 1947 and 1948. The Declaration was adopted by the United Nations General Assembly on 10th December 1948.

Amongst other human rights, this declaration enunciates certain fundamental human rights of every human being which are of special interest in the study of the ethics of circumcision. They are the rights to security of person, to freedom from torture and other cruel and unusual treatment, and to privacy. Motherhood and childhood have a right to special protection.

Preamble

Whereas recognition of the inherent dignity and of the equal and unalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world.

Whereas disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people,

Whereas it is essential, if a man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and opression, that human rights should be protected by the rule of law,

Whereas it is essential to promote the development of friendly relations between nations,

Whereas the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human being and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedom,

Whereas Member States have pledged themselves to achieve, in cooperation with the United Nations, the promotion of universal respect for and observance of human rights and fundamental freedoms,

Whereas a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge,

Now, therefore, The General Assembly proclaims this *Universal Declaration of Human Rights* as a common standard of achievement for all peoples and all nations. The every individual and every organ of society should keep this Declaration constantly in mind. The teaching and education promote the respect for these rights and freedoms by progressive measures in national and international to secure their universal and

effective recognition and observance. Both among the peoples of Member States themselves and among the peoples of territoriesare under the jurisdiction.

Article 1

All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.

Article 2

Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.

Furthermore, no distinction shall be made on the basis of the political, jurisdictional or international status of the country or territory to which a person belongs, whether it be independent, trust, non-self-governing or under any /other limitation of sovereignty.

Article 3

Everyone has the right to life, liberty and security of person.

Article 5

No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment.

Article 6

Everyone has the right to recognition everywhere as a person before the law.

Article 7

All are equal before the law and are entitled without any discrimination to equal protection of the law. All are entitled to equal protection against any discrimination in violation of this Declaration and against any incitement to such discrimination.

Article 8

Everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted him by the constitution or by law.

Article 12

No one shall be subjected to arbitrary interference with his privacy, family,

home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks.

Article 18

Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance.

Article 25

2. Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection.

Article 28

Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized.

Article 29

2. In the exercise of his rights and freedoms, everyone shall be subject only to such limitations as are determined by law solely for the purpose of securing due recognition and respect for the rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic society.

3. These rights and freedoms may in no case be exercised contrary to the purposes and principles of the United Nations.

Article 30

Nothing in this Declaration may be interpreted as implying for any State, group or person any right to engage in any activity or to perform any act aimed at the destruction of any of the rights and freedoms set forth herein.

6.3.2 Word Declaration for Education for All (1990)

Over sixty years ago education was declared as a basic human right for every person, and enshrined in the Universal Declaration on Human Rights in 1948. Since then, it has been reaffirmed in the International Covenant on Economic, Social and Cultural Rights (1966), the Conventional on the Elimination of Discrimination Against Women (1979) and the Convention on the Rights of the Child (1989) among many other international human rights instruments.

In 1990, over 150 governments adopted the World Declaration on Education for All at Jomtien, Thailand to boost the efforts towards delivering the right to education. Ten years later, the World Education Forum in Dakar, Senegal reaffirmed this commitment and adopted the six goals of Education For All (EFA) that run to 2015:

Goal 1: Expanding and improving comprehensive early childhood care and education, especially for the most disadvantaged and vulnerable children.

Goal 2: All children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities have access to free, quality and compulsory primary education by 2015.

Goal 3: Ensuring the learning needs of all young people and adults who are met through equitable access to appropriate learning and life skills programmes

Goal 4: Achieving a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults.

Goal 5: Eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality

Goal 6: Improving every aspect of the quality of education, and ensuring their excellence so that recognised and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills

180 countries signed up to make these goals happen, committing to putting legal frameworks, policies and finance . Everyone has a right to get education in four corner that are available, accessible, acceptable and adaptable. The richest countries pledged to help make Education for All a reality by committing to principles of international cooperation towards those countries with fewer financial resources.

Commitment towards the right to education was also reflected in the UN Millennium Development Goals, set in 2000 with a deadline for achievement by 2015. There are eight Millennium Development Goals (MDGs)of which two are focussed on education:

Ensure that all boys and girls complete primary schooling by 2015

Eliminate gender disparities in primary education by 2005 and at all levels by 2015

But the progress has been painfully slow. In the period immediately after the

setting of both the MDGs and the six EFA goals, investments were made by governments committed to achieving these goals. Education budgets, both foreign and domestic increased, enabling the abolition of tuition fees for primary school in several countries and the development of improved national educational plans.

Averagely 8.9% of domestic budget is going to education in low income countries - rising to an average of over 10% in sub-Saharan Africa - States are still falling behind.

- Enrolment in primary school may have increased since 2000, but this has slowed towards the end of the 2000-2010 periods; worse, completion rates remain low, with 10 million children dropping out of primary school every year in sub-Saharan Africa alone.
- Millions of children who complete the education of primary schools do so with poor performance than expected levels of reading, writing and numeracy they receive poor quality of education when they are in schools and - where pupil-teacher ratio is quite unnatural in the very poorest areas.
- Women and girls remain at a huge disadvantage: although gender parity in primary enrolment is within reach, girls are still less likely to progress to secondary education - in the vast majority of African countries, this chance is less than 50% - and women make up almost two-thirds of the 796 million adults without basic skills.
- Another 1.8 million teachers are needed to achieve universal primary education by 2015.

6.4 International Conventions:

6.4.1 Convention against Discrimination (1990)

The General Conference of the United Nations Educational, Scientific and Cultural Organization, meeting in Paris from 14th November to 15th December 1960, at its eleventh session,**Recalling** that the Universal Declaration of Human Rights asserts the principle of non-discrimination and proclaims that every person has the right to education, Considering that discrimination in education is a violation of rights enunciated in that Declaration,Considering that, under the terms of its Constitution, the United Nations Educational, Scientific and Cultural Organization has the purpose

of instituting collaboration among the nations with a view to furthering for all universal respect for human rights and equality of educational opportunity.

Recognizing that, consequently, the United Nations Educational, Scientific and Cultural Organization, while respecting the diversity of national educational systems, has the duty not only to prescribe any form of discrimination in education but also to promote equality of opportunity and treatment for all in education,

Having before It proposals concerning the different aspects of discrimination in education, constituting item 17.1.4 of the agenda of the session,

Having decided at its tenth session that this question should be made the subject of an international convention as well as of recommendations to Member States,

Adopts this Convention on the fourteenth day of December 1960.

Article 1

1. For the purposes of this Convention, the term 'discrimination' includes any distinction, exclusion, limitation or preference which, being based on race, colour, sex, language, religion, political or other opinion, national or social origin, economic condition or birth, has the purpose or effect of nullifying or impairing equality of treatment in education and in particular:

(a) Of depriving any person or group of persons of access to education of any type or at any level;

(b) Of limiting any person or group of persons to education of an inferior standard;

(c) Subject to the provisions of Article 2 of this Convention, of establishing or maintaining separate educational systems or institutions for persons or groups of persons; or

(d) Of inflicting on any person or group of persons conditions which are incompatible with the dignity of man.

2. For the purposes of this Convention, the term 'education' refers to all types and levels of education, and includes access to education, the standard and quality of education, and the conditions under which it is given.

Article 2

When permitted in a State, the following situations shall not be deemed to constitute discrimination, within the meaning of Article 1 of this Convention:

(a) The establishment or maintenance of separate educational systems or institutions for pupils of the two sexes offering equivalent access to education, provide a teaching staff with qualifications of the same standard as well as school premises and equipment of the same quality, and afford the opportunity to take the same or equivalent courses of study;

(b) The establishment or maintenance, for religious or linguistic reasons, of separate educational systems or institutions offering an education which is in keeping with the wishes of the pupil's parents or legal guardians, if participation in such systems or attendance at such institutions is optional and if the education provide to make like such standards as may be laid down or approved by the competent authorities, in particular for education of the same level;

(c) The establishment or maintenance of private educational institutions, if the object of the institutions is not to secure the exclusion of any group but to provide educational facilities in addition to those provided by the public authorities, if the institutions are conducted in accordance with that object, and if the education provided conforms with such standards as may be laid down or approved by the competent authorities, in particular for education of the same level.

Article 3

In order to eliminate and prevent discrimination within the meaning of this Convention, the States Parties thereto undertake:

(a) To abrogate any statutory provisions and any administrative instructions and to discontinue any administrative practices which involve discrimination in education;

(b) To ensure, by legislation where necessary, that there is no discrimination in the admission of pupils to educational institutions;

(c) Not to allow any differences of treatment by the public authorities between nationals, except on the basis of merit or need, in the matter of school fees and the grant of scholarships or other forms of assistance to pupils and necessary permits and facilities for the pursuit of studies in foreign countries ;

(d) Not to allow, in any form of assistance granted by the public authorities to educational institutions, any restrictions or preference based solely on the ground that pupils belong to a particular group;

(e) To give foreign nationals resident within their territory the same access to education as that given to their own nationals.

Article 4

The States Parties to this Convention undertake furthermore to formulate, develop and apply a national policy which, by methods appropriate to the circumstances and to national usage, will tend to promote equality of opportunity and of treatment in the matter of education and in particular:

(a) To make primary education free and compulsory; make secondary education in its different forms generally available and accessible to all; make higher education equally accessible to all on the basis of individual capacity; assure compliance by all with the obligation to attend school prescribed by law;

(b) To ensure that the standards of education are equivalent in all public educational institutions of the same level, and that the conditions relating to the quality of the education provided are also equivalent;

(c) To encourage and intensify by appropriate methods the education of persons who have not received any primary education or who have not completed the entire primary education course and the continuation of their education on the basis of individual capacity;

(d) To provide training for the teaching profession without discrimination.

Article 5

1. The States Parties to this Convention agree that:

(a) Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms; it shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace;

(b) It is essential to respect the liberty of parents and, where applicable, of legal guardians, firstly to choose for their children institutions other than those maintained by the public authorities but conforming to such minimum educational standards as may be laid down or approved by the competent authorities and, secondly, to ensure in a manner consistent with the procedures followed in the State for the application of its legislation, the religious and moral education of the children in conformity with their own convictions; and

no person or group of persons should be compelled to receive religious instruction inconsistent with his or their convictions;

(c) It is essential to recognize the right of members of national minorities to carry on their own educational activities, including the maintenance of schools and, depending on the educational policy of each State, the use or the teaching of their own language, provided however:

(i) That this right is not exercised in a manner which prevents the members of these minorities from understanding the culture and language of the community as a whole and from participating in its activities, or which prejudices national sovereignty;

(ii) That the standard of education is not lower than the general standard laid down or approved by the competent authorities; and

(iii) That attendance at such schools is optional.

2. The States Parties to this Convention undertake to take all necessary measures to ensure the application of the principles enunciated in paragraph 1 of this Article.

Article 6

In the application of this Convention, the States Parties to it undertake to pay the greatest attention to any recommendations hereafter adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organization defining the measures to be taken against the different forms of discrimination in education and for the purpose of ensuring equality of opportunity and treatment in education.

Article 7

The States Parties to this Convention shall in their periodic reports submitted to the General Conference of the United Nations Educational, Scientific and Cultural Organization on dates and in a manner to be determined by it, give information on the legislative and administrative provisions which they have adopted and other action which they have taken for the application of this Convention, including that taken for the formulation and the development of the national policy defined in Article 4 as well as the results achieved and the obstacles encountered in the application of that policy.

Article 8

Any dispute which may arise between any two or more States Parties to this Convention concerning the interpretation or application of this Convention, which is not settled by negotiation shall at the request of the parties to the dispute be referred, failing other means of settling the dispute, to the International Court of Justice for decision.

Article 9

Reservations to this Convention shall not be permitted.

Article 10

This Convention shall not have the effect of diminishing the rights which individuals or groups may enjoy by virtue of agreements concluded between two or more States, where such rights are not contrary to the letter or spirit of this Convention.

Article 11

This Convention is drawn up in English, French, Russian and Spanish, the four texts being equally authoritative.

Article 12

1. This Convention shall be subject to ratification or acceptance by States Members of the United Nations Educational, Scientific and Cultural Organization in accordance with their respective constitutional procedures.
2. The instruments of ratification or acceptance shall be deposited with the Director-General of the United Nations Educational, Scientific and Cultural Organization.

Article 13

1. This Convention shall be open to accession by all States not Members of the United Nations Educational, Scientific and Cultural Organization which are invited to do so by the Executive Board of the Organization.
2. Accession shall be effected by the deposit of an instrument of accession with the Director-General of the United Nations Educational, Scientific and Cultural Organization.

Article 14

This Convention shall enter into force, three months after the date of the deposit of the third instrument of ratification, acceptance or accession, but only with respect to

those States which have deposited their respective instruments on or before that date. It shall enter into force with respect to any other State three months after the deposit of its instrument of ratification, acceptance or accession.

Article 15

The States Parties to this Convention recognize that the Convention is applicable not only to their metropolitan territory but also to all non-self-governing, trust, colonial and other territories for the international relations of which they are responsible; they undertake to consult, if necessary, the governments or other competent authorities of these territories on or before ratification, acceptance or accession with a view to securing the application of the Convention to those territories, and to notify the Director-General of the United Nations Educational, Scientific and Cultural Organization of the territories to which it is accordingly applied, the notification to take effect three months after the date of its receipt.

Article 16

1. Each State Party to this Convention may denounce the Convention on its own behalf or on behalf of any territory for whose international relations it is responsible.
2. The denunciation shall be notified by an instrument in writing, deposited with the Director-General of the United Nations Educational, Scientific and Cultural Organization.
3. The denunciation shall take effect twelve months after the receipt of the instrument of denunciation.

Article 17

The Director-General of the United Nations Educational, Scientific and Cultural Organization shall inform the States Members of the Organization, the States not members of the Organization which are referred to in Article 13, as well as the United Nations, of the deposit of all the instruments of ratification, acceptance and accession provided for in Articles 12 and 13, and of the notifications and denunciations provided for in Articles 15 and 16 respectively.

Article 18

1. This Convention may be revised by the General Conference of the United Nations Educational, Scientific and Cultural Organization. Any such revision

shall, however, bind only the States which shall become Parties to the revising convention.

2. If the General Conference should adopt a new convention revising this Convention in whole or in part, then, unless the new convention otherwise provides, this Convention shall cease to be open to ratification, acceptance or accession as from the date on which the new revising convention enters into force.

Article 19

In conformity with Article 102 of the Charter of the United Nations, this Convention shall be registered with the Secretariat of the United Nations at the request of the Director-General of the United Nations Educational, Scientific and Cultural Organization.

Done in Paris, this fifteenth day of December 1960, in two authentic copies bearing the signatures of the President of the eleventh session of the General Conference and of the Director-General of the United Nations Educational, Scientific and Cultural Organization, which shall be deposited in the archives of the United Nations Educational, Scientific and Cultural Organization, and certified true copies of which shall be delivered to all the States referred to in Articles 12 and 13 as well as to the United Nations.

6.4.2 Convention on Rights of Child (1989)

The General Assembly, Recalling its previous resolutions, especially resolutions 33/166 of 20th December 1978 and 43/112 of 8th December 1988, and those of the Commission on Human Rights and the Economic and Social Council related to the question of a convention on the rights of the child,

Taking note, in particular, of Commission on Human Rights resolution 1989/57 of 8th March 1989, by which the Commission decided to transmit the draft convention on the rights of the child, through the Economic and Social Council, to the General Assembly, and Economic and Social Council resolution 1989/79 of 24th May 1989,

Reaffirming that children's rights require special protection and call for continuous improvement of the situation of children all over the world, as well as for their development and education in conditions of peace and security,

Profoundly concerned that the situation of children in many parts of the world remains critical as a result of inadequate social conditions, natural disasters, armed

conflicts, exploitation, illiteracy, hunger and disability, and convinced that urgent and effective national and international action is called for,

Mindful of the important role of the United Nations Children's Fund and of that of the United Nations in promoting the well-being of children and their development,

Convinced that an international convention on the rights of the child, as a standard-setting accomplishment of the United Nations in the field of human rights, would make a positive contribution to protecting children's rights and ensuring their well-being,

Bearing in mind that 1989 marks the thirtieth anniversary of the Declaration of the Rights of the Child and the tenth anniversary of the International Year of the Child,

1. Expresses its appreciation to the Commission on Human Rights for having concluded the elaboration of the draft convention on the rights of the child;
2. Adopts and opens for signature, ratification and accession the Convention on the Rights of the Child contained in the annex to the present resolution;
3. Calls upon all Member States to consider signing and ratifying or acceding to the Convention as a matter of priority and expresses the hope that it will come into force at an early date;
4. Requests the Secretary-General to provide all the facilities and assistance necessary for dissemination of information on the Convention;
5. Invites United Nations agencies and organizations, as well as intergovernmental and non-governmental organizations, to intensify their efforts with a view to disseminating information on the Convention and to promoting its understanding;
6. Requests the Secretary-General to submit to the General Assembly at its forty-fifth session a report on the status of the Convention on the Rights of the Child;
7. Decides to consider the report of the Secretary-General at its forty-fifth session under an item entitled "Implementation of the Convention on the Rights of the Child".

6.4.3 United Nations Convention of Rights of Persons with Disabilities (UNCRPD) 2006

The Convention on the Rights of Persons with Disabilities is an international human rightstreaty of the United Nations intended to protect the rights and dignity of persons with disabilities. Parties to the Convention are required to promote, protect, and ensure the full enjoyment of human rights by persons with disabilities and ensure that they enjoy full equality under the law. The Convention has served as the major catalyst in the global movement from viewing persons with disabilities as objects of charity, medical treatment and social protection towards viewing them as full and equal members of society, with human rights. It is also the only UN human rights instrument with an explicit sustainable development dimension. The Convention was the first human rights treaty of the third millennium.

The text was adopted by the United Nations General Assembly on 13 December 2006, and opened for signature on 30 March 2007. Following ratification by the 20th party, it came into force on 3 May 2008. As of February 2016, it has 160 signatories and 162 parties, including 161 states and the European Union (which ratified it on 23 December 2010 to the extent responsibilities of the member states were transferred to the European Union). In December 2012, a vote in the United States Senate fell six votes short of the two-thirds majority required for ratification.[4] The Convention is monitored by the Committee on the Rights of Persons with Disabilities.

History

1981 to 1992 was the UN "Decade of Disabled Persons". In 1987, a global meeting of experts to review progress recommended that the UN General Assembly should draft an international convention on the elimination of discrimination against persons with disabilities. Draft convention outlines were proposed by Italy and subsequently Sweden, but no consensus was reached. Many government representatives argued that existing human rights documents were sufficient. Instead, non-compulsory "Standard Rules on the Equalization of Opportunities for Persons with Disabilities" were adopted by the General Assembly in 1993. In 2000, leaders of five international disability NGOs issued a declaration, calling on all governments to support a Convention. In 2001, the General Assembly, following a proposal by Mexico, established an Ad Hoc Committee to consider proposals for a comprehensive and integral convention to promote and protect the rights and dignity of persons with disabilities, based on a holistic approach.[5] Disability rights organizations, including the International Disability Alliance as coordinator of an ad hoc International Disability

Caucus, participated actively in the drafting process, in particular seeking a role for disabled people and their organizations in the implementation and monitoring of what became the Convention.

Mexico initiated negotiations, with active support from GRULAC (the Latin American regional group). When support for a Convention was foundering in 2002 due to WEOG opposition, New Zealand played a pivotal role in achieving cross-regional momentum. Acting as facilitator from 2002-03, New Zealand eventually assumed the formal role of Chair of Ad Hoc Committee and led negotiations to a consensus agreement in August 2006, working closely with other Bureau members Jordan, Costa Rica, the Czech Republic, and South Africa, as well as Korea and Mexico. The Convention became one of the most quickly supported human rights instruments in history, with strong support from all regional groups. 160 States have signed the Convention upon its opening in 2007 and 126 States ratified the Convention within its first five years. In recognition of its role in creating the Convention, as well as the quality of New Zealand's landmark national Disability Strategy, Governor-General of New ZealandAnandSatyanand received the 2008 World Disability Award on behalf of the nation.

Summary

The Convention follows the civil law tradition, with a preamble, in which the principle that "all human rights are universal, indivisible, interdependent and interrelated" of Vienna Declaration and Programme of Action is cited, followed by 50 articles. Unlike many UN covenants and conventions, it is not formally divided into parts.

Article 1 defines the purpose of the Convention:

> to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity

Articles 2 and 3 provide definitions and general principles including communication, reasonable accommodation and universal design.

Articles 4-32 define the rights of persons with disabilities and the obligations of states parties towards them. Many of these mirror rights affirmed in other UN conventions such as the International Covenant on Civil and Political Rights, International Covenant on Economic, Social and Cultural Rights or the Convention Against Torture, but with specific obligations ensuring that they can be fully realised

by persons with disabilities.

Rights specific to this convention include the rights to accessibility including the information technology, the rights to live independently and be included in the community (Article 19), to personal mobility (article 20), habilitation and rehabilitation (Article 26), and to participation in political and public life, and cultural life, recreation and sport (Articles 29 and 30).

In addition, parties to the Convention must raise awareness of the human rights of persons with disabilities (Article 8), and ensure access to roads, buildings, and information (Article 9).

Articles 33-39 govern reporting and monitoring of the convention by national human rights institutions (Article 33) and Committee on the Rights of Persons with Disabilities (Article 34).

Articles 40-50 govern ratification, entry into force, and amendment of the Convention. **Article 49** also requires that the Convention be available in accessible formats.

Core provisions

Guiding principles of the Convention

There are eight guiding principles that underlie the Convention:

1. Respect for inherent dignity, individual autonomy including the freedom to make one's own choices, and independence of persons
2. Non-discrimination
3. Full and effective participation and inclusion in society
4. Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity
5. Equality of opportunity
6. Accessibility
7. Equality between men and women
8. Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities

Definition of disability

The Convention adopts a social model of disability, and defines disability as

including those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.

Principle of "reasonable accommodation"

The Convention defines "reasonable accommodation" to be "necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms" at the Article 2 and demands this all aspects of life including inclusive education.

Prevention of discrimination

The Article 8 of Convention stresses the awareness raising to foster respect for the rights and dignity against discrimination:

1. To raise awareness throughout society, including at the family level, regarding persons with disabilities, and to foster respect for the rights and dignity of persons with disabilities.
2. To combat stereotypes, prejudices and harmful practices relating to persons with disabilities, including those based on sex and age, in all areas of life.
3. To promote awareness of the capacities and contributions of persons with disabilities.
4. Initiating and maintaining effective public awareness campaigns designed: (i) to nurture receptiveness to the rights of persons with disabilities. (ii) to promote positive perceptions and greater social awareness towards persons with disabilities. (iii) to promote recognition of the skills, merits and abilities of persons with disabilities, and of their contributions to workplace and the labour market.
5. Encouraging all organs of the mass media to portray persons with disabilities in a manner consistent with the purpose of the present Convention.
6. Promoting awareness-training programmes regarding persons with disabilities and the rights of persons with disabilities.

Accessibility

The Convention stresses that persons with disabilities should be able to live

independently and participate fully in all aspects of life. To this end, States Parties should take appropriate measures to ensure that persons with disabilities have access, to the physical environment, to transportation, to information and communications technology, and to other facilities and services open or provided to the public. accessibility can be grouped into three main groups. 1. physical accessibility 2. service accessibility 3. accessibility to communication and information.

Situations of risk and humanitarian emergency

Article 11 of the Convention affirms that States Parties shall take, in accordance with their obligations under international law, including international humanitarian law and international human rights law, all necessary measures to ensure the protection and safety of persons with disabilities in situations of armed conflict, humanitarian emergencies and the occurrence of natural disaster.

Recognition before the law and legal capacity

Article 12 of the Convention affirms the equal recognition before law and legal capacity of the persons with disabilities.

States Parties should:

1. reaffirm that persons with disabilities have the right to recognition everywhere as a person before the law.
2. recognize that persons with disabilities enjoy legal capacity on an equal basis with others in all aspects of life.
3. take appropriate measures to provide access by persons with disabilities to the support they may require in exercising their legal capacity.
4. ensure that all measures that relate to the exercise of legal capacity provide for appropriate and effective safeguards to prevent abuse in accordance with international human rights law. Such safeguards shall ensure that measures relating to the exercise of legal capacity respect the rights, will and preferences of the person, are free of conflict of interest and undue influence, are proportional and tailored to the person's circumstance, apply for the shortest time possible and are subject to regular review by a competent, independent and impartial authority or judicial body. The safeguards shall be proportional to the degree to which such measures affect the person's rights and interests.

Access to justice

Article 13 of the Convention affirms the effective access to justice for persons with disabilities, stating that:

1. States parties shall ensure effective access to justice for persons with disabilities on an equal basis with others, including through the provision of procedural and age-appropriate accommodations, in order to facilitate their effective role as a direct and indirect participants, including as witnesses, in all legal proceeding, including at investigative and other preliminary stages.
2. In order to help to ensure effective access to justice for persons with disabilities, states Parties shall promote appropriate training for those working in the field of administration of justice, including police and prison staff. This Article together with the Article 12 are cited by the "Handbook on prisoners with special needs"[7] by United Nations Office on Drugs and Crime.

Right to education

The Convention states that persons with disabilities should be guaranteed the right to inclusive education at all levels, regardless of age, without discrimination and on the basis of equal opportunity.

States Parties should ensure that:

1. children with disabilities are not excluded from free and compulsory primary education, or from secondary education;
2. adults with disabilities have access to general tertiary education, vocational training, adult education and lifelong learning;
3. persons with disabilities receive the necessary support, within the general education system, to facilitate their effective education; and
4. effective individualized support measures are put in place to maximize academic and social development.

States Parties should take appropriate measures, such as:

1. endorsing the learning of Braille, alternative script, augmentative and alternative modes, means and formats of communication and orientation and mobility skills, and facilitating peer support and mentoring;
2. supporting the learning of sign language and promoting the linguistic identity

of the deaf community;

3. advocating that education of persons, particularly children, who are blind and/or deaf, is delivered in the most appropriate languages and means of communication for the individual; and
4. employing teachers, including teachers with disabilities, who are qualified in sign language and/or Braille, and to train education professionals and staff about disability awareness, use of augmentative and alternative modes and formats of communication, and educational techniques and materials to support persons with disabilities.

Right to health

Article 25 specifies that "persons with disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disability."[8]

Protecting the integrity of the person

Article 17 of the Convention states that every person with disabilities has a right to respect for his or her physical and mental integrity on an equal basis with others.

Respect for the family

Article 23 of the Convention prohibits compulsory sterilization of disabled persons[9] and guarantees their right to adopt children.

Habilitation and rehabilitation

Article 26 of the Convention affirms that "States Parties shall take effective and appropriate measures, including through peer support, to enable persons with disabilities to attain and maintain maximum independence, full physical, mental, social and vocational ability, and full inclusion and participation in all aspects of life. To that end, States Parties shall organize, strengthen and extend comprehensive habilitation and rehabilitation services and programmes, particularly in the areas of health, employment, education and social services, in such a way that these services and programmes:

1. Begin at the earliest possible stage, and are based on the multidisciplinary assessment of individual needs and strengths;
2. Support participation and inclusion in the community and all aspects of society,

are voluntary, and are available to persons with disabilities as close as possible to their own communities, including in rural areas.

3. States Parties shall promote the development of initial and continuing training for professionals and staff working in habilitation and rehabilitation service.
4. States Parties shall promote the availability, knowledge and use of assistive devices and technologies, designed for persons with disabilities, as they relate to habilitation and rehabilitation.

Participation rights

The Convention on the Right of Persons with Disabilities recognised that "that disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others" and that "persons with disabilities continue to face barriers in their participation as equal members of society."

The Convention makes participation of the disabled one of its principles, stating "The principles of the present Convention shall be:...Full and effective participation and inclusion in society", subsequently enshrining the right of disabled to participate fully and equally in the community, education, all aspect of life (in the context of habilitation and rehabilitation), political and public life, cultural life, leisure and sports.[10]

States Parties should take appropriate measure such as:

1. To enables persons with disabilities to have the opportunity to develop and utilize their creative, artistic and intellectual potential, not only for their own benefit, but also for the enrichment of society.
2. In accordance with international law, to ensure that law protecting intellectual property rights do not constitute an unreasonable or discriminatory barrier to access by persons with disabilities to cultural materials.
3. So that persons with disabilities should be entitled, on an equal basis with others, to recognition and support of their specific cultural and linguistic identity, including sign languages and deaf culture.

Work and employment

Article 27 requires that States Parties recognize the right of persons with disabilities to work, on an equal basis of others; this includes the right to the opportunity to gain a living by work freely chosen or accepted in a labour market and work

environment that is open, inclusive and accessible to persons with disabilities. And that States Parties shall safeguard and promote the realization of the right to work, including for those who acquire a disability during the course of employment, by taking appropriate steps, including through legislation, to inter alia:

1. Prohibit discrimination on the basis of disability with regard to all matters concerning all forms of employment, continuance of employment, career advancement and safe and healthy working conditions;
2. Protect the rights of persons with disabilities, on an equal basis with others, to just and favourable conditions of work, including equal opportunities and equal remuneration for work of equal value, safe and healthy working conditions, including protection from harassment, and the redress of grievances;
3. Ensure that persons with disabilities are able to exercise their labour and trade union rights on an equal basis with others;
4. Enable persons with disabilities to have effective access to general technical and vocational guidance programmes, placement services and vocational and continuing training;
5. Promote employment opportunities and career advancement for persons with disabilities in the labour market, as well as assistance in finding, obtaining, maintaining and returning to employment;
6. Promote opportunities for self-employment, entrepreneurship, the development of cooperative and starting one's own business.
7. Ensure that reasonable accommodation is provided to persons with disabilities in the workplace.
8. Promote the acquisition by persons with disabilities of work experience in the open labour market.
9. Promote vocational and professional rehabilitation, job retention and return-to-work programmes for persons with disabilities.

States Parties shall ensure that persons with disabilities are not held in slavery or in servitude, and are protected, on an equal basis with others, from forces or compulsory labour.

Adequate standard of living and social protection

Article 28 requires that States Parties recognize the right of persons with

disabilities to an adequate standard of living for themselves and their families, including adequate food, clothing and housing, and to the continuous improvement of living conditions, and shall take appropriate steps to safeguard and promote the realization of this rights without discrimination on the basis of disability.

States Parties recognize the right of persons with disabilities to social protection and to the enjoyment of that rights without discrimination on the basis of disability, and shall take appropriate steps to safeguard and promote the realization of the rights, including measures;

1. To ensure equal access by persons with disabilities to clean water service, and to ensure access to appropriate and affordable service, device and other assistance for disability-related needs.
2. To ensure access by persons with disabilities, in particular women and girls with disabilities and older persons with disabilities, to social protection programmes and poverty reduction programmes.
3. To ensure access by persons with disabilities and their families living in situations of poverty to assistance from the State with disability-related expenses, including adequate training, counselling, financial assistance and respite care.
4. To ensure access by persons with disabilities to public housingprogrammes.
5. To ensure equal access by persons with disabilities to retirement benefits and programmes.

Right to vote

Article 29 requires that all Contracting States protect "the right of persons with disabilities to vote by secret ballot in elections and public referendums". According to this provision, each Contracting State should provide for voting equipment which would enable disabled voters to vote independently and secretly. Some democracies, e.g., the US, Japan, Netherlands, Slovenia, Albania or India allow disabled voters to use electronic voting machines or electronic aides which help disabled voters to fill the paper ballot. In others, among them Azerbaijan, Kosovo, Canada, Ghana, United Kingdom, and most of African and Asian countries, visually impaired voters can use ballots in Braille or paper ballot templates. Many of these and also some other democracies, Chile for example, use adjustable desks so that voters on wheelchairs can approach them. Some democracies only allow another person to cast a ballot for

the blind or disabled voter. Such arrangement, however, does not assure secrecy of the ballot.

Article 29 also requires that Contracting States ensure "that voting procedures, facilities and materials are appropriate, accessible and easy to understand and use." In some democracies, i.e. Sweden and the US, all the polling places already are fully accessible for disabled voters.

Reservations

A number of parties have made reservations and interpretative declarations to their application of the Convention.

Australia does not consider itself bound to stop forcibly medicating those labeled mentally ill when it is considered a last resort.

El Salvador accepts the Convention to the extent that it is compatible with its constitution.

Malta interprets the right to health in Article 25 of the Convention as not implying any right to abortion. It also reserves the right to continue to apply its own election laws around accessibility and assistance.

Mauritius does not consider itself bound by the Article 11 obligation to take all necessary measures to protect people with disabilities during natural disasters, armed conflict or humanitarian emergencies, unless permitted by domestic legislation.

The Netherlands interprets the right to life in Article 10 within the framework of its domestic laws. It also interprets Article 25(f), which bars the discriminatory denial of health care, as permitting a person to refuse medical treatment, including food or fluids.

Poland interprets Articles 23 and 25 as not conferring any right to abortion.

The United Kingdom has reservations relating to the right to education, immigration, service in the armed forces and an aspect of social security law.

6.5 International Framework:

6.5.1 Salamanca framework

More than 300 participants representing 92 governments and 25 international organizations met in Salamanca in 1994 to further the objective of Education for All

by considering the fundamental policy shifts required to promote the approach of inclusive education, namely enabling schools to serve all children, particularly those with special educational needs. Organized by the Government of Spain in co-operation with UNESCO, the Conference brought together senior education officials, administrators, policy-makers and specialists, as well as representatives of the United Nations and the Specialized Agencies, other international governmental organizations, non-governmental organizations and donor agencies. The Conference adopted the Salamanca Statement on Principles, Policy and Practice in Special Needs Education and a Framework for Action. These documents are informed by the principle of inclusion, by recognition of the need to work towards "schools for all" - institutions which include everybody, celebrate differences, support learning, and respond to individual needs. As such, they constitute an important contribution to the agenda for achieving Education for All and for making schools educationally more effective.

This Framework for Action on Special Needs Education was adopted by the World Conference on Special Needs Education organized by the Government of Spain in co-operation with UNESCO and held in Salamanca from 7 to 10 June 1994. Its purpose is to inform policy and guide action by governments, international organizations, national aid agencies, nongovernmental organizations and other bodies in implementing the Salamanca Statement on Principles, Policy and Practice in Special Needs Education. The Framework draws extensively upon the national experience of the participating countries as well as upon resolutions, recommendations and publications of the United Nations system and other intergovernmental organizations, especially the Standard Rules on the Equalization of Opportunities for Persons with Disabilities'. It also takes account of the proposals, guidelines and recommendations arising from the five regional seminars held to prepare the World Conference.

The right of every child to an education is proclaimed in the Universal Declaration of Human Rights and was forcefully reaffirmed by the World Declaration on Education for All. Every person with a disability has a right to express their wishes with regard to their education, as far as this can be ascertainedParentshave an inherent right to be consultedon the form of education best suited to the needs, circumstances and aspiration so far their children.

The guiding principle that informs this Framework is that Schoolsshould accommodate all children regardless so f theirphysical, intellectual, social, emotional, linguistic or otherconditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations, children from

linguistic, ethnic or cultural minorities and children from other disadvantaged or marginalized areas or groups. These conditions create a rangeof different challengesto schoolsystems.In the contextof thisFramework, the term 'special educational needs' refers to allthose children and youth whose needs arise from disabilities orlearning difficulties. Many children experience learningdifficulties and thus have special educational needs at sometime during their schooling. Schools have to find ways ofsuccessfully educating all children, including those who haveserious disadvantagesand disabilities. There is an emergingconsensusthat children and youth with special educationalneedsshouldbe includedin the educational arrangements for the majority of children. This has led to the concept of the inclusive school. The challenge confronting the inclusiveschool is that of developing a child-cantered pedagogy capableof successfully educating all children, including those whohave serious disadvantages and disabilities. The merit of suchschools is not only that they are capable of providing qualityeducationto all children; their establishments a crucial stepinhelping to change discriminatory attitudes, in creatingwelcoming communities and in developing an inclusivesociety. A change in social perspective is imperative. For fartoo long, the problems of people with disabilities have beencompounded by a disabling society that has focused upon their impairments rather than their potential.Special needs education incorporates theroven principles ofsound pedagogy from which all children may benefit. Itmust accordingly be adapted to the needs of the child ratherthan the child fitted to preordained assumptions regarding thepace and nature of the learning process. A child-centredpedagogyis beneficial to all studentsand, as a consequence,society as a whole. Experience has demonstrated that it can substantially reduce the drop-out and repetition that are so much a part of many education systems while ensuring higheraverage levels of achievement. A child-centred pedagogy canhelp to avoid the waste of resources and the shattering of hopesthat is all too frequently a consequence of poor qualityinstruction and a 'one size fits all' mentality towards education.Child-centred schools are, moreover, the training ground for a people-oriented society that respects both the differences and the dignity of all human beings.This Framework for Action comprises the following sections:

I. New thinking in special needs education

II. Guidelines for action at the national level

A. Policy and organization

B. School factors

C. Recruitment and training of educational personnel

D. External support services

E. Priority areas

F. Community perspectives

G. Resource requirements

III. Guidelines for action at the regional and international level.

6.5.2 Biwako Millennium Framework of Action 2002

In May 2002, ESCAP adopted the resolution "Promoting an inclusive, barrier-free and rights based society for people with disabilities in the Asian and Pacific regions in the 21st century". The resolution also proclaimed the extension of the Asian and Pacific Decade of Disabled Persons 1993-2002, for another decade, 2003-2012.

In October 2002, Governments at the High-level Intergovernmental Meeting to Conclude the Asian and Pacific Decade of Disabled Persons 1993-2002, adopted the "Biwako Millennium Framework for Action towards an Inclusive, Barrier-free and Rights-based Society for Persons with Disabilities in Asia and the Pacific" as the regional policy guideline for the new decade. The "Biwako Millennium Framework" outlines issues, action plans and strategies towards an inclusive, barrierfree and rights-based society for persons with disabilities. To achieve the goal, the framework identifies seven priority areas for action, in which critical issues, targets with specific timeframe and actions are specified. In all, 21 targets and 17 strategies supporting the achievement of all the targets are identified. The new decade (2003-2012) will ensure the paradigm shift from a charity-based approach to a rights-based approach to protect the civil, cultural, economic, political and social rights of persons with disabilities. To pursue the targets and strategies, consultations with and involvement of civil societies, inter alia, self-help organizations and concerned NGOs are essential.

The following summarizes the seven priority areas for action, the targets, strategies, timeframe and supporting/monitoring mechanisms.

(1) Self-help organizations of persons with disabilities and related family and parent associations.

(2) Women with disabilities.

(3) Early detection, early intervention and education.

(4) Training and employment, including self-employment.

(5) Access to build environment and public transport.

(6) Access to information and communications, including information, communication and assertive technologies.

(7) Poverty alleviation through social security and livelihood programmes.

(8) Highlights of item (5): Access to build environment and public transport.

Inaccessibility to the built environment, including public transport systems, is still the major barrier forpersons with disabilities. This problem will only be exacerbated, as the number of older people withdisabilities increases in the region. Universal design approaches benefit all people in society, includingolder persons, pregnant women and parents with young children. Its economic benefits have been legitimized, yet substantive initiatives at policy level have not been taken. Three targets are set to improvethe situation: The Government should adopt and enforce accessibility standards for planning of publicfacilities, infrastructure and transport, including those in rural/ agricultural contexts. Existing public transport systems and all new and renovated public transport systems should be made accessible as soon as practicable.

All international and regional funding agencies for infrastructure development should include universal and inclusive design concepts in their loan/grant award criteria.

6.6 National Commissions & Policies

6.6.1. Kothari Commission (1964)

Indian Education Commission (1964-1966), popularly known as Kothari Commission, was an adhoc commission set up by the Government of India to examine all aspects of the educational sector in India, to evolve a general pattern of education and to advise guidelines and policies for the development of education in India. It was formed on 14 July 1964 under the chairmanship of Daulat Singh Kothari, then chairman of the University Grants Commission. The terms of reference of the commission was to formulate the general principles and guidelines for the development of education from primary level to the highest and advise the government on a standardized national pattern of education in India. However, the medical and legal studies were excluded from the purview of the commission. The tenancy of the

commission was from 1964 to 1966 and the report was submitted by the commission on 29 June 1966.

The four main themes of the commission were:

1. Increase in Productivity
2. Promoting social and National Integration
3. Education and Modernization
4. Developing social, moral and spiritual values

Main recommendations

One of the main recommendations of the commission was the standardization of educational system on 10+2+3 pattern, across the country. It advised that the pre-primary education which had different names such as kindergarten, Montessori and pre-basic should be renamed as pre-primary and the primary education (renamed as lower primary) to be up to the 4th standard. It further classified the schooling as upper primary or higher primary and high school (up to standard X). The under graduate education was identified as XI and XII standards under the name, higher secondary or pre university. The graduate studies were recommended to be standardized as a three-year course. The educational system up to master's degree was categorized as first (primary education), second (secondary education up to XII) and third levels of education (higher studies).

The commission recommended that a common public education system should be introduced and the it should be vocationalzed in general and special streams by introducing work experience as a part of education. It further stressed on the need to make work experience and social/national service as an integral part of education. Specializations of subjects were advised to be started from higher secondary levels.

The days of instruction were recommended to be increased to 234 for schools and 216 for colleges and the working hours to be fixed at not less than 1000 hours per academic year, preferably higher at 1100 or 1200 hours. It also advised for reduction of national holidays. Linking of colleges to a number of schools in the neighbourhood, utilization of school facilities 8 hours a day all through the year, establishment of book banks, identification of talents and provision of scholarships, setting up of day study and residential facilities and opportunities for students to earn while studying were some of the other recommendations of the commission. It also emphasized on free education up to and including lower secondary level of education.

Commission laid stress on women education and advised setting up of state and central level committees for overseeing women education. It suggested establishing schools and hostels for women and urged to identify ways to find job opportunities for women in the educational sector.[9] Focusing on equalization of opportunities to all irrespective of caste, religion and gender and to achieve social and national integration, the schools were advised to provide education to backward classes on a priority basis and the minimum level of enrolment at a secondary school were advised to be not less than 360 every year. Two sets of curricula were prescribed, one at state level and one at the national level and the schools were recommended to experiment with the curriculum. It also proposed that three or four text books to be prescribed for each subject and moral and religious education be made a part of the curriculum. The curriculum prescribed by the commission was:

Lower primary level (1 to 4)

- One language (regional)
- Mathematical studies
- Environmental studies
- Creative studies
- Health studies
- Work experience

Higher primary level (5 to 8)

- Two languages (one regional and one national) and preferably a third language
- Mathematical studies
- Science studies
- Social studies
- Art
- Physical education
- Work experience
- Moral studies

Lower secondary level (IX and X)

- Three languages
- Mathematical studies

- Science studies
- Social studies
- Art
- Physical education
- Work experience
- Moral studies

Higher secondary level (XI and XII)

- Two languages (one modern Indian language and one classical or foreign language)
- Any three subjects from (a) one additional language, (b) History (c) Economics (d) Logic (e) geography (f) psychology (g) sociology (h) art (i) physics (j) chemistry (k) mathematics (l) biology (m) geology (n) home science
- Art
- Physical education
- Work experience
- Moral studies

It also recommended the establishment of guidance and counsellingcentres and a new approach in the evaluation of student performances. The commission suggested the neighbourhood school system without social or religious segregation and a school complex system integrating primary and secondary levels of education. It put forward the suggestion that state and national boards of examination be set up and state level evaluation machinery be put in place.

The commission recommended the establishment of Indian Education Service, along the lines of Indian Administrative Service, to bring in professional management to education sector. It proposed standardization and revision of the pay scales of the teaching, non-teaching and administrative staff and prescribed minimum pay levels based on their locations. It also advised standardization of pay scales working under different managements such as government, private and local bodies. The minimum scale was suggested to be in the ratio of 1:2:3 for teachers in the primary, secondary and higher levels of educational sector. Another proposal was for the establishment of amachinery for continuous on job training of the teaching staff and for efforts to raise the status of the teachers to attract talents into the profession. It urged laws to

be passed to legalize the educational standards and the educational expenditure to be raised from the then level of 2.9 percent of the GDP to 6 percent, to be achieved by the fiscal year, 1985-86. A significant suggestion was the issuance of a National Policy on Education by the Government of India which should serve as a guideline for the state and local bodies in the design and implementation of their educational plans.

6.6.2 National Education Policy 1968

The National Policy on Education (NPE) is a policy formulated by the Government of India to promote education amongst India's people. The policy covers elementary education to colleges in both rural and urban India. The first NPE was promulgated in 1968 by the government of Prime MinisterIndira Gandhi, and the second by Prime Minister Rajiv Gandhi in 1986.

Since the nation's independence in 1947, the Indian government sponsored a variety of programmes to address the problems of illiteracy in both rural and urban India. MaulanaAbulKalam Azad, India's first Minister of Education, envisaged strong central government control over education throughout the country, with a uniform educational system. The Union government established the University Education Commission (1948-1949) and the Secondary Education Commission (1952-1953) to develop proposals to modernize India's education system. The Resolution on Scientific Policy was adopted by the government of Jawaharlal Nehru, India's first Prime Minister. The Nehru government sponsored the development of high-quality scientific education institutions such as the Indian Institutes of Technology. In 1961, the Union government formed the National Council of Educational Research and Training (NCERT) as an autonomous organisation that would advise both the Union and state governments on formulating and implementing education policies.

Based on the report and recommendations of the Education Commission (1964-1966), the government of Prime Minister Indira Gandhi announced the first National Policy on Education in 1968, which called for a "radical restructuring" and equalize educational opportunities in order to achieve national integration and greater cultural and economic development. The policy called for fulfilling compulsory education for all children up to the age of 14, as stipulated by the Constitution of India, and the better training and qualification of teachers. The policy called for focus on learning of regional languages, outlining the "three language formula" to be implemented in secondary education - the instruction of the English language, the official language of the state where the school was based, and Hindi, the national

language. Language education was seen as essential to reduce the gulf between the intelligentsia and the masses. Although the decision to adopt Hindi as the national language had proven controversial, the policy called for use and learning of Hindi to be encouraged uniformly to promote a common language for all Indians. The policy also encouraged the teaching of the ancient Sanskrit language, which was considered an essential part of India's culture and heritage. The NPE of 1968 called for education spending to increase to six percent of the national income. As of 2013, the NPE 1968 has moved location on the national website.

6.6.3 National Policy on Education 1986

Having announced that a new policy was in development in January, 1985, the government of Prime Minister Rajiv Gandhi introduced a new National Policy on Education in May, 1986. The new policy called for "special emphasis on the removal of disparities and to equalise educational opportunity," especially for Indian women, Scheduled Tribes (ST) and the Scheduled Caste (SC) communities. To achieve these, the policy called for expanding scholarships, adult education, recruiting more teachers from the SCs, incentives for poor families to send their children to school regularly, development of new institutions and providing housing and services. The NPE called for a "child-centred approach" in primary education, and launched "Operation Blackboard" to improve primary schools nationwide. The policy expanded the Open University system with the Indira Gandhi National Open University, which had been created in 1985. The policy also called for the creation of the "rural university" model, based on the philosophy of Indian leader Mahatma Gandhi, to promote economic and social development at the grassroots level in rural India.

6.6.4 Revised National Policy on Education 1992

The 1986 National Policy on Education was modified in 1992 by the P.V. NarasimhaRao government. In 2005, Prime Minister Manmohan Singh adopted a new policy based on the "Common Minimum Programme" of his United Progressive Alliance (UPA) government. Programme of Action (PoA), 1992 under the National Policy on Education (NPE), 1986 envisaged conduct of a common entrance examination on all India basis for admission to professional and technical programmes in the country. For admission to Engineering and Architecture/Planning programmes, Government of India vide Resolution dated 18 October 2001 has laid down a Three - Exam Scheme (JEE and AIEEE at the National Level and the State Level Engineering Entrance Examinations (SLEEE) for State Level Institutions - with an option to join AIEEE). This takes care of varying admission standards in these programmes and

helps in maintenance of professional standards. This also solves problems of overlaps and reduces physical, mental and financial burden on students and their parents due to multiplicity of entrance examinations.The National Policy on Education-1986 was modified in 1992. It is a comprehensive frame work to guide the development of education in the country. The principles included in the NPE-1968 are also included in the new policy with some modifications.

Modifications and Additions

- The new education policy will give emphasis on retention of children in the schools at primary level. The cause of the drop out of the children from the school should be strategically handled by making plans. The network of Non-Formal education in the country to be introduced and also the education should be made compulsory up to the age of 14.
- Greater attention should be given to the backward classes, physically challenged and minority child for their development in education.
- Major emphasis will be laid on women's education to overcome the poor rate of illiteracy among female. They will be given priority in various educational institutes and special provisions will be made available for them in vocational, technical and professional education.
- Institutions will be provided with resources like infrastructure, computers, libraries. Accommodation for students will be made available especially for girls students. Teachers will have the rights to teach, learn and research.
- The Central Advisory Board of Education will play an important role in reviewing educational development and also to determine the changes required to improve the education in the country.
- State government may establish State Advisory Board of Education to look after the state's progress in education.
- Non-government organizations will be encouraged to facilitate the education in the country. At the same time steps will be taken to prevent establishment of institutions for commercialization of education.

6.6.5 National Curriculum Framework 2005

The National Curriculum Framework (NCF 2005) is one of four National Curriculum Frameworks published in 1975, 1988, 2000 and 2005 by the National Council of Educational Research and Training NCERT in India.

The Framework provides the framework for making syllabi, textbooks and teaching practices within the school education programmes in India. The NCF 2005 document draws its policy basis from earlier government reports on education as Learning Without Burden and National Policy of Education 1986-1992 and focus group discussion. After wide ranging deliberations 21 National Focus Group Position Papers have been developed under the aegis of NCF-2005. The state of art position papers provided inputs for formulation of NCF-2005. The document and its offshoot textbooks have come under different forms of reviews in the press.

Its draft document came under the criticism from the Central Advisory Board of Education (CABE). In February 2008 the director Krishna Kumar in an interview also discussed the challenges that are faced by the document. The approach and recommendations of NCF-2005 are for the entire educational system. A number of its recommendations, for example, focus on rural schools. The syllabus and textbooks based on it are being used by all the CBSE schools, but NCF-based material is also being used in many State schools.

NCF 2005 has been translated into 22 languages and has influenced the syllabi in 17 States. The NCERT gave a grant of Rs.10 lakh to each State to promote NCF in the language of the State and to compare its current syllabus with the syllabus proposed, so that a plan for future reforms could be made. Several States have taken up this challenge. This exercise is being carried out with the involvement of State Councils for Educational Research and Training [SCERT] and District Institutes of Education and Training [DIET].

Main Features of the NCF 2005

The document is divided into 5 areas:

Perspective of NCF

The NCF was framed considering the articulated ideas in the past such as

- To shift learning from rote method.
- To ensure overall development of children.
- To integrate examination into classroom learning and make it more flexible.
- to nurture identify of caring concerns within the democratic policy of India.
- nurturing an over-riding identity informed by caring concerns within the democratic polity of the country.

NCF focused on

- Learning without burden to make learning a joyful experience and move away from textbooks to be a basis for examination and to remove stress from children. It recommended major changes in the design of syllabus.
- To develop a sense of self-reliance and dignity of the individual this would form the basis of social relationship and would develop a sense of nonviolence and oneness across the society.
- To develop a child centered approach and to promote universal enrolment and retention up to the age of 14.
- To inculcate the feeling of oneness, democracy and unity in the students the curriculum is enabled to strengthen our national identity and to enable the new generation revaluate.
- J. P. Naik has described equality, quality and quantity as the exclusive triangle for Indian education.
- With respect to social context NCF 2005 has ensured that irrespective of caste, creed, religion and sex all are provided with a standard curriculum.

Learning and knowledge

Learning should be an enjoyable act where children should feel that they are valued and their voices are heard. The curriculum structure and school should be designed to make school a satisfactory place for students to feel secure and valued.The curriculum should focus on holistic development of the students to enhance physical and mental development in individuals and as well as with the peer interactions.

In order to bring about the overall development of the students, adequate nutrition,physical exercise and other psychosocial needs are addressed hence participation in yoga and sports in required. Learning should be made enjoyable and should relate to real life experiences learning should involve concepts and deeper understanding. Adolescence is a vulnerable age for students and the curriculum should prepare the students and provide support for social and emotional support that will inculcate positive behavior and provide skills essential to cope with situations that they encounter in their lives, peers pressure and gender stereotype.

Inclusive education to be given priority and flexibility to follow a curriculum to suit the needs of every student irrespective of students having disabilities.

Constructive learning has to be part of the curriculum. Situations and opportunities

have to be created for students to provide students with challenges, encourage creativity and active participation for students. Students have to be encouraged to interact with peers, teachers and older people which would open up many more rich learning opportunities.

The foundation should be laid strong and firm. primary, upper primary and middle school should provide the space for children to explore and develop rational thinking that they would imbibe in them and have sufficient knowledge on concepts, language, knowledge,investigation and validation procedures.

Curricular area, School stages and assessment

Language - Three language formula system to be followed. medium of communication should be the home language.[10] The First language to be studied must be the mother tongue or the regional language. The Second language - In Hindi speaking States, the second language will be some other modern Indian language or English, and - In non-Hindi speaking States, the second language will be Hindi or English. The Third language - In Hindi speaking States, the third language will be English or a modern Indian language not studied as the second language, and - In non-Hindi speaking States, the third language will be English or a modern Indian language not studied as the second language.

Mathematics -The emphasis for learning mathematics is that all students can learn and need to lean mathematics.Pedagogy and learning environment have to be made favourable for students to develop interest in basic skills and include variety of mathematics models by pedagogy which devotes a greater percentage of instructional time to problem solving and active learning.

Computers - Introduction of computers in schools is to move from a predetermined set of outcomes and skill sets to one that enables students to develop 16 explanatory reasoning and other higher-order skills. o Enable students to access sources of knowledge, interpret them, and create knowledge rather than be passive users. o Promote flexible models of curriculum transaction. o Promote individual learning styles. o Encourage use of flexible curriculum content, at least in primary education, and flexible models of evaluation.

Science - Pedagogy of learning sciences should be designed to address the aims of learning science is to learn the facts and principles of science and it's applications, consistent with the stage of cognitive development. To acquire skills and understand the methods and processes that lead to generation and validation of scientific knowledge. To develop a historical and developmental perspective of science and to

enable her to view science as a social enterprise.To relate to the, local as well as global, and appreciate the issues at the interface of science, technology and society.To acquire the requisite theoretical knowledge and practical technological skills to enter the world of work.To nurture the natural curiosity, aesthetic sense and creativity in science and technology. To imbibe the values of honesty, integrity, cooperation, concern for life and preservation of environment and to cultivate 'scientific temper'- objectivity, critical thinking and freedom from fear and prejudice.

Social Sciences - Social science a subject is included in schools to assist students to explore their interests and aptitudes in order to choose appropriate university courses and/or careers. To encourage them to explore higher levels of knowledge in different disciplines. To promote problem-solving abilities and creative thinking in the citizens of tomorrow, to introduce students to different ways of collecting and processing data and information in specific disciplines, and help them arrive at conclusions, and to generate new insights and knowledge in the process.

Art education - The objectives of including art education in schools is to bring about the complete development of the students personality and mental health, to appreciate cultural heritage and develop respect for each other's work and connect to environment.

Health and Physical education - To provide theoretical and practical inputs to provide an integrated and holistic understanding of health, disease, accidents and physical fitness among children.To provide skills for dealing with psycho-social issues in the school, home and the community. To help children grow as responsible citizens by inculcating in them certain social and moral values through games, sports, N.C.C., Red Cross, Scouts & Guides, etc.

Study of Peace - Skills that are developed as part of curriculum activity such as to listening with patience and endurance, purity of mind to develop concentration, aptitude for cooperation and teamwork, to reach out to get answers (curiosity and rational inquiry), acceptance of discipline, and a positive attitude to study/work are the trademarks of a good student which in turn are also the skills of a peace-oriented person. Thus the curriculum also inculcates peace and democracy into students.

Work and Education - Work related education is made as an integral component of the school curriculum, in the form of - work experience, work education, SUPW, craft education, life oriented education, pre vocational education and generic education. Work based education aims at involving children in a variety of production or service oriented activities, to develop skills, positive attitudes and values through work and also to develop work related competencies.

School and Classroom Environment

Physical environment has to be maintained favorable to students in terms of infrastructure, adequate light and ventilation, student teacher ratio, hygiene and safe environment. Schools should also treat students with equality,justice respect, dignity and right of the students. Give equal opportunities for all students to participate in all activities without any bias. Policy of inclusion has to be part of the school where differently abled and children from marginalized section get equal opportunities. The schools should also be well equipped with libraries, laboratories and educational technology laboratories.

Systemic Reforms

The NCF has aimed at bringing about reforms in the education system to bring about a curriculum that is learner centric, has a flexible process, provide learner autonomy, teacher plays a role of a facilitator, supports and encourages learning, involves active participation of learners, develops multidisciplinary curriculum, focuses on education, brings about multiple and divergent exposure, multifarious, continuous appraisal in educational system.

6.6.6 National Policy for Persons with Disabilities (2006)

The Government of India formulated the National Policy for Persons with Disabilities in February 2006 which deals with Physical, Educational & Economic Rehabilitation of persons with disabilities. In addition the policy also focuses upon rehabilitation of women and children with disabilities, barrier free environment, social security, research etc.

The National Policy recognizes that Persons with Disabilities are valuable human resource for the country and seeks to create an environment that provides those equal opportunities, protection of their rights and full participation in society.

Focus of the policy

The focus of the policy is on the following

1. **Prevention of Disabilities** - Since disability, in a large number of cases, is preventable; the policy lays a strong emphasis on prevention of disabilities. It calls for programme for prevention of diseases, which result in disability and the creation of awareness regarding measures to be taken for prevention of disabilities during the period of pregnancy and thereafter to be intensified and their coverage expanded.
2. **Rehabilitation Measures** - Rehabilitation measures can be classified into three distinct groups:

i. Physical rehabilitation, which includes early detection and intervention, counseling& medical interventions and provision of aids & appliances. It will also include the development of rehabilitation professionals.

ii. Educational rehabilitation including vocational education and

iii. Economic rehabilitation for a dignified life in society.

6.7 National Acts & Programmes:

6.7.1. IEDC 1974

Integrated Education for Disabled Children (IEDC), In the1970s, the government launched the Centrally Sponsored Schemeof IEDC. The scheme aimed to provide educational opportunitiesto learners with disability in regular schools and to facilitate theirachievement and retention. Under the scheme, hundred percentfinancial assistance is provided for setting up resource centres,surveys and assessment of children with disability, purchase andproduction of instruction materials and training and orientationof teachers. The scheme is currently being revised to reflect theparadigm shift towards inclusive education.

The right of every child to an education is proclaimed in theUniversal Declaration of Human Rights and was stronglyreaffirmed by the World Declaration on Education for All.

6.7.2. RCI Act (1992)

The Rehabilitation Council of India (RCI) is the apex government body, set up under an Act of Parliament, to regulate training programmes and courses targeted at disabled, disadvantaged, and special education requirement communities. It is the only statutory council in India that is required to maintain the Central Rehabilitation Register which mainly documents details of all qualified professionals who operate and deliver training and educational programmes for the targeted communities. In the year 2000, the Rehabilitation Council of India (Amendment) Act, 2000, was introduced and notified consequently by the government of India. The amendment brought definitions and discussions provided within the earlier Rehabilitation Council of India Act, 1992, under the ambit of a larger act, namely,

An Act to provide for the constitution of Rehabilitation Council of India for regulating the training of rehabilitation professionals and the maintenance of a Central

Rehabilitation Register and for Matters connected therewith or incidental thereto.

6.7.3 The Persons with Disabilities Act, 1995 (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995.

This is an act to give effect to the proclamation and equality of the people with disability in the Asian & Pacific region.

Disability: - means

a) Blindness

b) Low vision

c) Leprosy cured

d) Hearing impairment

e) Locomotor disability

f) Mental Retardation

g) Mental illness

(j) "employer" means, -

(i) In relation to a Government, the authority notified by the Head of the Department in this behalf or where no such authority is notified, the Head of the Department; and

(ii) in relation to an establishment, the Chief Executive Officer of that establishment;

(k) "establishment" means a corporation established by or under a Central, Provincial or State Act, or an authority or a body owned or controlled or aided by the Government or a local authority or a Government company as defined in section 617 of the Companies Act, 1956 (1 of 1956) and includes Departments of a Government;

(l) "hearing impairment" means loss of sixty decibels or more in the better ear in the conversational range of frequencies;

(m) "institution for persons with disabilities" means an institution for the reception, care, protection, education, training, rehabilitation or any other service of persons with disabilities;

(n) "leprosy cured person" means any 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 from undertaking any gainful occupation, and the expression "leprosy cured" shall be construed accordingly;

(o) "loco motor disability" means disability of the bones, joints or muscles leading to substantial restriction of the movement of the limbs or any form of cerebral palsy;

(p) "medical authority" means any hospital or institution specified for the purposes of this Act by notification by the appropriate Government;

(q) "mental illness" means any mental disorder other than mental retardation;

(r) "mental retardation" means a condition of arrested or incomplete development of mind of a person which is specially characterized by sub normality of intelligence;

(s) "notification" means a notification published in the Official Gazette;

(t) "person with disability" means a person suffering from not less than forty per cent of any disability as certified by a medical authority;

(u) "person with low vision" means a person with impairment of visual functioning even after treatment or standard refractive correction but who uses or is potentially capable of using vision for the planning or execution of a task with appropriate assistive device;

(v) "prescribed" means prescribed by rules made under this Act;

(w) "rehabilitation" refers to a process aimed at enabling persons with disabilities to reach and maintain their optimal physical, sensory, intellectual, psychiatric or social functional levels;

(x) "Special Employment Exchange" means any office or place established and maintained by the Government for the collection and furnishing of information, either by keeping of registers or otherwise, respecting-

(i) persons who seek to engage employees from amongst the persons suffering from disabilities;

(ii) persons with disability who seek employment;

(iii) vacancies to which person with disability seeking employment may be appointed;

(y) "State Co-ordination Committee" means the State Co-ordination Committee constituted under sub-section (1) of section 13;

(z) "State Executive Committee" means the State Executive Committee constituted under sub-section (l) of section 19.

CHAPTER II

The Central Coordination Committee

3. **Central Co-ordination Committee.** - (1) The Central Government shall by notification constitute a body to be known as the Central Co-ordination Committee to exercise the powers conferred on, and to perform the functions assigned to it, under this Act.

CHAPTER III

The State Co-ordination Committee

13. **State Co-ordination Committee.** - (1) Every State Government shall, by notification, constitute a body to be known as the State Co-ordination Committee to exercise the powers conferred on, and to perform the function assigned to it, under this Act.

CHAPTER IV

Preventation And Early Detection Of Disabilities

25. **Appropriate Governments and local authorities to take certain steps for the prevention of occurrence of disabilities.** - Within the limits of their economic capacity and development, the appropriate Governments and the local authorities, with a view to preventing the occurrence of disabilities, shall-

(a) undertake or cause to be undertaken surveys, investigations and research concerning the cause of occurrence of disabilities;

(b) promote various methods of preventing disabilities;

(c) screen all the children at least once in a year for the purpose of identifying "at-risk" cases;

(d) provide facilities for training to the staff at the primary health centres;

(e) sponsor or cause to be sponsored awareness campaigns and disseminate or cause to be disseminated information for general hygiene, health and sanitation;

(f) take measures for pre-natal, parental and post-natal care of mother and child;

(g) educate the public through the pre-schools, schools, primary health centres, village level workers and anganwadi workers;

(h) create awareness amongst the masses through television, radio and other mass media on the causes of disabilities and the preventive measures to be adopted.

CHAPTER V
Education

26. **Appropriate Governments and local authorities to provide children with disabilities free education, etc.** - The appropriate Governments and the local authorities shall- (a) ensure that every child with a disability has access to free education in an appropriate environment till he attains the age of eighteen years;

(b) endeavor to promote the integration of students with disabilities in the normal schools;

(c) promote setting up of special schools in Government and private sector for those in need of special education, in such a manner that children with disabilities living in any part of the country have access to such schools;

(d) endeavor to equip the special schools for children with disabilities with vocational training facilities.

27. **Appropriate Governments and local authorities to make schemes and programmes for non-formal education, etc.**

(a) Conducting part-time classes in respect of children with disabilities who having completed education up to class fifth and could not continue their studies on a whole-time basis;

(b) Conducting special part-time classes for providing functional literacy for children in the age groupof sixteen and above;

(c) Imparting non-formal education by utilizing the available manpower in rural areas after giving them appropriate orientation;

(d) Imparting education through open schools or open universities;

(e) Conducting class and discussions through interactive electronic or other media;

(f) Providing every child with disability free of cost special books and equipment needed for his education.

28. The appropriate Governments shall initiate or cause to be initiated research by official and nongovernmentalagencies for the purpose of designing and developing new assistive devices, teachingaids, special teaching materials or such other items as are necessary to give a child with disabilityequal opportunities in education.

29. The appropriate Governments shall set up adequate number of teachers' training institutions andassist the national institutes and other voluntary organizations to develop teachers' training programmes specializing in disabilities so that requisite trained manpower is available for special schools and integrated schools for children with disabilities.

30. Without prejudice to the foregoing provisions, (be appropriate Governments shall by notificationprepare a comprehensive education scheme which shall make Provision for-

(a) Transport facilities to the children with disabilities or in the alternative financial incentives to parents or guardians to enable their children with disabilities to attend schools.

(b) The removal of architectural barriers from schools. colleges or other institution, imparting vocational and professional training;

(c) The supply of books, uniforms and other materials to children with disabilities attending school.

(d) The grant of scholarship to students with disabilities.

(e) Setting up of appropriate fora for the redressal of grievances of parent, regarding the placement oftheir children with disabilities;

(f) Suitable modification in the examination system to eliminate purely mathematical questions for thebenefit of blind students and students with low vision;

(g) Restructuring of curriculum for the benefit of children with disabilities;

(h) restructuring the curriculum for benefit of students with hearing impairment to facilitate them totake only one language as part of their curriculum.

31. All educational institutions shall provide or cause to be provided amanuensis to blind students andstudents with or low vision.

CHAPTER VI:

Employment

32. Appropriate Governments shall--

(a) Identify posts, in the establishments, which can be reserved for the persons with disability;

(b) At periodical intervals not exceeding three years, review the list of posts identified and up-date thelist taking into consideration the developments in technology.

33. Every appropriate Government shall appoint in every establishment such percentage of vacanciesnot less than three per cent. for persons or class of persons with disability of which one per cent. Eachshall be reserved for persons suffering from-

(i) Blindness or low vision;

(ii) Bearing impairment;

(iii) Loco motor disability or cerebral palsy, in the posts identified for each disability:

Provided that the appropriate Government may, having regard to the type of work carried on in anydepartment or establishment, by notification subject to such conditions, if any, as may be specified insuch notification, exempt any establishment from the provisions of this section.

34. (1) The appropriate Government may, by notification. Require that from such date as May he specified. By notification. The employer in every establishment shall furnish such information or return as may be prescribed in relation to vacancies appointed for person, with disability that have occurred or are about to occur in that establishment to such Special Employment Exchange as may beprescribed and the establishment shall thereupon comply with such requisition.

(2) The form in which and the intervals of time for which information or returns shall be furnished andthe particulars, they shall contain shall be such as may be prescribed.

35. Any person authorized by the Special Employment Exchange in writing, shall have access to anyrelevant record or document in the possession of any establishment, and may enter at any reasonabletime and premises where he believes such record or document to be, and inspect or take copies ofrelevant records or documents or ask any question necessary for obtaining any information.

36. Where in any recruitment year any vacancy under section 33, cannot be filled up due to non-availabilityof a suitable person with disability or, for any other sufficient reason, such vacancy shallbe carried forward in the succeeding recruitment year and if ;r the succeeding recruitment year alsosuitable person with disability is not available, it may first be filled by interchange among the threecategories and only when there is no parson with disability available for the post in that Year, theemployer shall fill up the vacancy by appointment of a person, other than a person with disability:

Provided that if the nature of vacancies in an establishment is such that a given category of person cannot be employed, the vacancies may be interchanged among the three categories with the prior approval of the appropriate Government.

37. (1) Every employer shall maintain such record in relation to the person. With disability employedin his establishment in such form and in such manner as may be prescribed by the appropriateGovernment.

(2) The records maintained under sub-section (1) shall be open to inspection at all reasonable hours bysuch persons as may be authorized in this behalf by general or special order by the appropriate Government.

38. (1) The appropriate Governments and local authorities shall by notification formulate schemes forensuring employment of persons with disabilities, and such schemes may provide for-

(a) The training and welfare of persons with disabilities;

(b) The relaxation of upper age limit;

(c) Regulating the employment;

(d) Health and safety measures and creation of a non-handicapping environment in places where persons with disabilities are employed;

(e) The manner in which and the person by whom the cost of operating the schemes is to be defrayed;and

(f) Constituting the authority responsible for the administration of the scheme.

39. All Government educational institutions and other educational institutions receiving aid from theGovernment, shall reserve not less than three per cent seat for persons with disabilities.

40. The appropriate Governments and local authorities shall reserve not less than three per cent. in allpoverty alleviation schemes for the benefit of persons with disabilities.

41. The appropriate Governments and the local authorities shall, within the limits of their economic capacity and development, provide incentives to employers both in public and private sectors to ensurethat at least five per cent. of their work force is composed of persons with disabilities.

CHAPTER VII:
Affirmative Action

42. The appropriate Governments shall by notification make schemes to provide aids and appliances topersons with disabilities.

43. The appropriate Governments and local authorities shall by notification frame schemes in favor ofpersons with disabilities, for the preferential allotment of land at concession] rates for-

(a) House;

(b) Setting up business;

(c) Setting up of special recreation centers;

(d) Establishment of special schools;

(e) Establishment of research centers;

(f) Establishment of factories by entrepreneurs with disabilities

CHAPTER VIII:
Non-discrimination

44. Establishments in the transport sector shall, within the limits of their economic capacity and development forthe benefit of persons with disabilities.

45. The appropriate Governments and the local authorities shall, within the limits of their economic capacity and development.

46. The appropriate Governments and the local authorities shall, within the limits of their economic capacity and development.

47. (1) No establishment shall dispense with or reduce in rank, an employee who acquires a disabilityduring his service.

(2) No promotion shall be denied to a person merely on the ground of his disability:

CHAPTER IX:
Research And Manpower Development

48. The appropriate Governments and local authorities shall promote and sponsor research, inter alia, in the following areas-

(a) Prevention of disability;

(b) Rehabilitation including community based rehabilitation;

(c) Development of assistive devices including their psychosocial aspects;

(d) Job identification;

(e) On site modifications in offices and factories.

49. The appropriate Governments shall provide financial assistance to universities, other institutions ofhigher learning, professional bodies and non-governmental

research-. units or institutions, forundertaking research for special education. rehabilitation and manpower development.

CHAPTER X:

Recognition of Institutions For Persons with Disabilities

50. The State Government shall appoint any authority, as it deems fit to be a competent authority forthe purposes of this Act.

51. Save as otherwise provided under this Act, no person shall establish or maintain any institution forpersons with disabilities except under and in accordance with a certificate of registration issued in thisbehalf by the competent authority:

52. (1) Every application for a certificate of registration shall be made to the competent authority insuch form and in such manner as may be prescribed by the State Government.

(2) On receipt of an application under sub-section (1), the competent authority shall make such enquiries as it may deem fit and where it is satisfied that the applicant has cornplied with the requirements of this Act and the rules made thereunder it shall grant a certificate of registration to theapplicant and where it is not so satisfied the competent authority shall. by order. refuse to grant thecertificate applied for:

Provided that before making any order refusing to grant a certificate the competent authority shall giveto the applicant a reasonable opportunity of being heard and every order of refusal to grant a certificateshall he communicated to the applicant in such manner as may be prescribed by the State Government.

(3) No certificate of registration shall be granted under sub-section (2) unless the institution with respect to which an application has been made is in a position to provide such facilities and maintainsuch standards as may be prescribed by the State Government.

(4) A certificate of registration granted under this section, -

(a) Shall, unless revoked under section 53, remain in force for such period as may, be prescribed by, the State Government.

(b) May be renewed from time to time for a like period; and

(c) Shall be in such form and shall be subject to such conditions as may be Prescribed by the State Government

(5) An application for renewal of a certificate of registration shall be made not less than sixty days before the period of validity.

(6) The certificate of registration shall he displayed by the institution in a conspicuous place.

53. (1) the competent authority may, if it has reasonable cause to believe that the Holder of the certificate of registration granted under sub-section (2) of section 52 has -

(a) Made a statement in relation to any application for the issue of renewal of the certificate which isincorrect or false in material particulars; or

(b) Committed or has caused to be committed any breach of rules or any conditions subject to whichthe certificate was granted, it may after making such inquiry, as it deems fit, by order, revoke the certificate:

Provided that no such order shall he made until an opportunity is given to the holder of the certificateto show cause as to why the certificate should not be revoked.

(2) Where a certificate in respect of an institution has been revoked under sub-section (1), such institution shall cease to function from the date of such revocation.

Provided that where an appeal lies under section 54 against the order of revocation, such institution shall cease to function-

(a) Where no appeal has been preferred immediately on the expiry of the period prescribed for the filing of such appeal, or

(b) Where such appeal has been preferred, but the order of revocation has been upheld, from the dateof the order of appeal.

(3) On the revocation of a certificate in respect of an institution, the competent authority may direct that any person with disability who is an inmate of such institution on the date of such revocation, shall be-

(a) Restored to the custody of her or his parent, spouse or lawful guardian, as the case may be, or

(b) Transferred to any other institution specified by the competent authority.

(4) Every institution, which holds a certificate of registration, which is revoked, under this section shall, immediately after such revocation. Surrender such certificate to the Competent authority.

54. (1) Any person aggrieved by the order of the competent authority, refusing to grant a certificate orrevoking a certificate may, within such period as may he prescribed by the State Government, preferan appeal to that Government against such refusal or revocation.

(2) The order of the State Government on such appeal shall he final.

55. Nothing contained in this Chapter shall apply, to an institution for persons with disabilities established or maintained by the Central Government or State Government.

CHAPTER XI:

Institution For Persons With Severe Disabilities

56. The appropriate Government may establish and maintain institutions for persons with severe disabilities at such places as it thinks fit.

(2) Where, the appropriate Government is of opinion that any institution other than an institution.

Established under sub-section (1), is fit for the rehabilitation of the persons with severe disabilities, theGovernment may recognize such institution as an institution for persons with severe disabilities for thepurposes of this Act:

Provided that no institution shall be recognized under this section unless such institution has compliedwith the requirements of this Act and the rules made there under.

(3) Every institution established under sub-section (1) shall be maintained in such manner and satisfysuch conditions as may be prescribed b), the appropriate Government.

(4) For the purposes of this section "person with severe disability" meansa person with eighty percent. or more of one or more disabilities.

CHAPTER XII:

The Chief Commissioner And Commissioners For Persons

WITH DISABILITIES

57. (1) The Central Government may, by notification appoint a Chief Commissioner for persons withdisabilities for the purposes of this Act.

(2) A person shall not be qualified for appointment as the Chief Commissioner unless he has specialknowledge or practical experience in respect of matters relating to rehabilitation.

(3) The salary and allowances payable to and other terms and conditions of service (including pension, gratuity and other retirement benefits of the Chief Commissioner shall be such as may be prescribedby the Central Government.

(4) The Central Government shall determine the nature and categories of officers and other employeesrequired to assist the Chief Commissioner in the discharge of his functions and provide the ChiefCommissioner with such officers and other employees as it thinks fit.

(5) The officers and employees provided to the Chief Commissioner shall discharge their functions under the general superintendence of the Chief Commissioner.

(6) The salaries and allowances and other conditions of service of officers and employees provided tothe Chief Commissioner shall be such as may be prescribed by the Central Government.

58. The Chief commissioner shall ---

(a) Coordinate the work of the Commissioners;

(b) Monitor the utilization of funds disbursed by the Central Government;

(c) Take steps to safeguard the rights and facilities made available to Persons with disabilities;

(d) Submit reports to the Central Government on the implementation of the Act at such intervals asthat Government may prescribe.

59. Without prejudice to the provisions of section 58 the Chief Commissioner

may of his own motionor on the application of any aggrieved person or otherwise look into complaints with respect to mattersrelating to -

(a) Deprivation of rights of persons with Disabilities.

(b) Non-implementation of laws, rules, byelaws, regulations. Executive orders, guidelines or instructions made or issued by the appropriate Governments and the local authorities for the welfareand protection of rights or persons with disabilities. And take up the matter with the appropriateauthorities.

60. (1) Every State Government may, by notification appoint a Commissioner for persons with disabilities for the purpose of this Act.

(2) A person shall not be qualified for appointment as a Commissioner unless he has special knowledge or practical experience in respect of matters relating to rehabilitation.

(3) The salary and allowances payable to and other terms and conditions of service (including pensiongratuity and other retirement benefits) of the Commissioner shall be such as may he prescribed by theState Government.

(4) The State Government shall determine the nature and categories of officers and other employeesrequired to assist the Commissioner in the discharge of his functions and provide the Commissionerwith such officers and other employees as it thinks fit.

(5) The officers and employees provided to the Commissioner shall discharge their functions under thegeneral superintendence of the Commissioner.

(6) The salaries and allowances and other conditions of service of officers and employees provided tothe Commissioner shall be such as may he prescribed by the State Government.

61. The Commissioner within the State shall-

(a) Coordinate with the departments of the State Government for the programmes and schemes, for thebenefit of persons with disabilities;

(b) Monitor the utilization of funds disbursed by the State Government;

(c) Take steps to safeguard the rights and facilities made available to persons with disabilities.

(d) Submit reports to the State Government on the implementation of the Act

at such intervals as thatGovernment may prescribe and forward a copy thereof to the Chief Commissioner.

62. Without prejudice to the provisions of section 61 the Commissioner may of his own motion or onthe application of any aggrieved person or otherwise look into complaints with respect to matters relating to—

(a) Deprivation of rights of persons with disabilities;

(b) Non-implementation of laws, rules, bye-laws, regulations, executive orders, guidelines or instructions made or issued by the appropriate Governments and the local authorities for the welfareand protection of rights of persons with disabilities, and take up the matter with the appropriateauthorities.

63. The Chief Commissioner and the Commissioners shall, for the purpose of discharging them functions under this Act, have the same powers as are vested in a court under the Code of Civil Procedure, 1908 while trying a suit, in respect of the following matters, namely: -

(a) Summoning and enforcing the attendance of witnesses;

(b) Requiring the discovery and production of any documents;

(c) Requisitioning any public record or copy thereof from any court or office;

(d) Receiving evidence on affidavits; and

(e) Issuing commissions for the examination of witnesses or documents.

62. Without prejudice to the provisions of section 61 the Commissioner may of his own motion or onthe application of any aggrieved person or otherwise look into complaints with respect to mattersrelating to---

(a) Deprivation of rights of persons with disabilities;

(b) Non-implementation of laws, rules, bye-laws, regulations, executive orders, guidelines or instructions made or issued by the appropriate Governments and the local authorities for the welfareand protection of rights of persons with disabilities, and take up the matter with the appropriateauthorities.

63. The Chief Commissioner and the Commissioners shall, for the purpose of discharging them functions under this Act, have the same powers as are vested in a court under the Code of Civil Procedure, 1908 while trying a suit, in respect of the following matters, namely: -

(a) Summoning and enforcing the attendance of witnesses;

(b) Requiring the discovery and production of any documents;

(c) Requisitioning any public record or copy thereof from any court or office;

(d) Receiving evidence on affidavits; and

(e) Issuing commissions for the examination of witnesses or documents.

(2) Every proceeding before the Chief Commissioner and Commissioners shall be a judicial proceeding within the meaning directions 193 and 228 of the Indian Penal Code and the Chief Commissioner, the Commissioner, the competent authority, shall be deemed too he a civil court for thepurposes of section 195 and Chapter XXVI of the Code of Criminal Procedure, 1973.

64. (1) The Chief Commissioner shall prepare in such form and at such time for each financial year asmay be prescribed by the Central Government an annual report giving a full account of his activitiesduring the previous financial year and forward a copy thereof to the Central Government.

(2) The Central Government shall cause the annual report to be laid before each House of Parliamentalong with the recommendations explaining the action taken or proposed to be taken on therecommendation made therein in so far as they relate to the Central Government and the reasons fornon-acceptance, if any, of any such recommendation or part.

65. (1) The Commissioner shall prepare in such form and at such time for each financial year as maybe prescribed by the State Government an annual report giving a full account of his activities duringthe previous financial year and forward a copy thereof to the State Government.

The State Government shall cause the annual report to be laid before each State Legislature along withthe recommendations explaining the action taken or proposed to be taken on the recommendationmade therein in so far as they relate to the State Government and the reasons for non-acceptance, ifany, of any such recommendation or part.

CHAPTER XIII:
Social Security

66. The appropriate Governments and the local authorities shall within the limits of them economic capacity and development undertake or cause to be undertaken rehabilitation of allpersons with disabilities.

67. The appropriate Government shall by notification frame an insurance scheme for the benefit ofits employees with disabilities.

68. The appropriate Governments shall within the limits of their economic capacity and developmentshall by notification frame a scheme for payment of an unemployment allowance to persons withdisabilities registered with the Special Employment Exchange for more than two years and who couldnot he placed in any gainful occupation.

CHAPTER XIV:
Miscellaneous

69. Whoever fraudulently avails or attempts to avail, any benefit meant for persons with disabilities,shall be punishable with imprisonment for a term which may extend to two years or with fine whichmay extend to twenty thousand rupees or with both.

70. The Chief Commissioner, the Commissioners and other officers and staff provided to them shallbe deemed to be public servants within the meaning of section 21 of the Indian Penal Code.

71. No suit, prosecution or other legal proceeding shall lie against the Central Government, the StateGovernments or the local authority or any officer of the Government in respect of anything which isdone in good faith or intended to be done in pursuance of this Act and any rules or orders made thereunder.

72. The provisions of this Act, or the rules made there under shall be in addition to, and not in derogation of any other law for the time being in force or any rules, order or any instructions issued there under, enacted or issued for the benefit of persons with disabilities.

73. The appropriate Government may, by notification, make rules for carrying out the provisions ofthis Act.

Conclusion - The main purpose of this act is to define responsibilities of

Central Governments and State Governments with regard to services for disabled persons. It recommends making changed in assessment and curriculum and removing architecture barriers to support inclusion. It also recommends providing free books, uniform, etc.

(Source from K. L. MOHANPURIA.,Secy. to the Govt. of India)

6.7.4. The National Trust Act, (1999)

An Act to provide for the constitution of a body at the national level for theWelfare of Persons with Autism, Cerebral Palsy, Mental Retardation andMultiple Disabilities and for matters connected therewith or incidental thereto.Be it enacted by Parliament in the Fiftieth Year of the Republic of India asfollows:

CHAPTER 1

Preliminary

1. This Act may be called the *National Trust* for Welfare of Personswith Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999
2. It extends to the whole of India expect the State of Jammu andKashmir.

In this Act, unless the context otherwise requires,-

a. "autism" means a condition of uneven skill development primarilyaffecting the communication and social abilities of a person,marked by repetitive and ritualistic behavior;

b. "Board" means Board of trustees constituted under section 3;

c. "cerebral palsy" means a group of non-progressive condition of a person characterized by abnormal motor control posture resulting from brain insult or injuries occurring in the pre-natal, perinatal or infant period of development. "Chairperson" means the Chairperson of the Board appointed under clause (a) sub-section (4) of section 3;

e. "Chief Executive" Officer" means the Chief Executive Officer appointed under sub-section (1) of section 8;

f. "Member" means a Member of the Board and includes the Chairperson;

g. "Mental retardation" means a condition of arrested or incomplete development of mind of person, which is specially characterizedby sub-normality of intelligence;

h. "Multiple disabilities" means a combination of two or more disabilities as defined in clause (i) of section 2 of the Persons with Disabilities (Equal Opportunities, Protection of Rights andFull Participation) Act, 1995;

i. "Notification" means notification published in the Official Gazette;

j. "Persons" with disability" means a person suffering from any of the conditions relating to autism, cerebral palsy, mental retardation or a combination of any two or more of such conditions and include a person suffering from severe multiple disability;

k. "Prescribed" means prescribed by rules made under this Act;

l. "Professional" means a person who is having special expertise ina field, which would promote the welfare of persons with disability;

m. "Registered organization" means an association of persons with disability or an association of parents of persons with disability or a voluntary, as the case may be, registered under section 12;

n. "Regulation" means the regulations made by the Board under this Act;

o. "Severe disability" means disability with eighty percent or more of one or more of multiple disabilities;

p. "Trust" means the National Trust for Welfare of Persons with Autism, Cerebral Palsy Mental Retardation and Multiple Disability constituted under sub section (1) of section 3.

CHAPTER 2

The National Trust For Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disability

With effect from such date as the Central Government may, by notification, appointment, there shall be constituted, for the purpose of this Act, a body by the name of the National Trust for Welfare of persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities which shall be a body corporate by the name aforesaid, having perpetual successionand a common seal, with power, subject

to the provision of this Act, to acquire, hold and dispose of property, both movable andimmovable, and both movable and immovable, and contact, andshall, by the said name, sure or be sued.

CHAPTER 3

Objects of the Trusts The objects of the trust shall be:

- to enable and empower persons with disability to live as independently and as fully as possible within and as close to thecommunity to which they belong;

a. to strengthen facilities to provide support to persons with disability to live within their own families;

b. to extend support to registered organization to provide need based services during the period of crises in the family of persons with disability ;

c. to deal with problems of persons with disability who do not have family support;

d. to promote measures for the care and protraction of persons with disability in the event of death of their parent or guardian;

e. to evolve procedure for the appointment of guardians and trustees for persons with disability requiring such protection;

f. to facilitate the realization of equal opportunities, protection of right and full participation of persons with disability; and

g. to do any other act which is incidental to the aforesaid object.

CHAPTER 4

Powers and Duties of The Board shall:-

- receive from the Central Government a one-time contribution of rupees one hundred crores for a corpus, the income where of shall be utilized to provide for adequate standard of living for persons with disability;

a. receive bequest of movable property any person for the benefit of the person with disability in general and for furtherance of the objectives of the Trust in particular:

Provide that it shall be obligatory on the part of the Board tomake arrangement for adequate standard of living for thebeneficiary named in the bequest, if any and to utilize theproperty bequeathed for any other purpose for which the bequest has been made: Provide further that the Board shall not be underany obligation to utilize the entire amount mentioned in the bequest for the exclusive benefit of the persons with disability named as beneficiary in the bequest;

b. receive from the Central Government such sums as may be considered necessary in each financial year for providing financial assistance to registered organization for carrying outany approved Programme.

For the purpose of sub-section (1), the expression "approved Programme" means

c. any Programme which promote independent living in the community for persons with disability by creating a conducive environment in the community;

ii. counseling and training of family members of persons with disability;

iii. setting up of adult training units, individual and grouphomes;

d. any programme which promotes respite care, foster family care or day care service for persons with disability;

e. Setting up residential hostels and residential homes for persons with disability;

f. Development of self-help group persons with disability to pursue the realization of their rights;

g. setting up of local committee to grant approval fir guardianship and

h. such other programmes which promote the objective of the Trust.While earmarking funds for the purpose of clause:(c) of sub-section (2), preference shall be given to woman with disability or to persons with severe disability and to senior citizen with disability. Explanation:- For the purpose of this sub-section, the expression;-. "Persons with severe disability" shall have the same meaning as is assigned to it under sub-section (4) of section 56 of the persons with Disabilities (Equal Opportunities, Protection of Right and Full Participation) Act, 1995;"Senior citizen' means a person who is above the age of sixty-five years or more.

CHAPTER 5

Procedure for Registration

0. Any association of person with disability, or any association of parents of persons with disability or a voluntary organization whose main object is promotion of welfare of persons with disability may make an application for registration to the Board.

1. An application for registration shall be made in such form and manner and at such place as the Board may by regulation provide and shall contain such particulars and accompanied with such documents and such fees may be provided in the regulation.

2. On receipt of application for registration, the Board may make such inquires as it thinks fit in respect of genuineness of theapplication and correctness of any particulars thereon.

3. Upon receipt of such application the Board shall either grant registration to the applicant or reject such application for reasons to be recorded in writing Provided that where registration has been refused to the application, the said applicant may again make an application for registration after removing defects, if any in its previous application.

CHAPTER 6

Local level Committees

0. The Board shall constitute a local level committee for such area as may be specified by it from time to time.

1. A local committee shall consist of an officer of the civil service of the Union or of the State, not below the rank of a District Magistrate or a District Commissioner of a district;

a. a representative of a registered organization; and

b. a person with disability as defined in clause (t) of section 2 of the persons with disabilities (Equal Opportunities,Protection of rights and Full Participation) Act, 1995

2. A local level committee shall continue to work for a period of three years from the date of its constitution or till such time it is reconstituted by the Board

3. A local level committee shall meet at least once in every three months or at such interval as may be necessary.

0. A parent of a person with disability or his relative may make as application to the local level committee for appointment of any person of his choice to act as a guardian of the persons with disability.

1. Any registered organization may make an application in the prescribed form to the local level committee for appointment of a guardian for a person with disability:

Provide that no such application shall be entertained by the local level committee, unless the consent of the guardian of the disabled person is also obtained. 2. While considering the application for appointment of a guardian,the local level committee shall consider:- whether the person with disability needs a guardian; the purpose for which the guardianship is required for person with disability.

3. The local level committee shall receive, process and decide applications received under sub-section (1) and (2), in such manner as may be determined by regulation: Provide that while making recommendation for the appointment of a guardian, the local level committee shall provide for the obligation which are tobe fulfilled by the guardian.

4. The local committee shall send to the Board the particulars received by it and orders passed there on at such interval as may be determined by regulations. Every person appointed as a guardian of a person with disability under this chapter shall, wherever required, either have the care of such person of disability and his property or be responsible for the maintenance of the person with disability.

0. Every person appointed as a guardian under section 14 shall, within a period of six months from the date of his appointment,deliver to the authority which appointed him, an inventory of immovable property belonging to the person with disability and all assets and other movable property received on behalf of the person with disability, together with a statement of all claims due to and all debts and liabilities due by such person with disability.

1. Every guardian shall also furnish to the said appointing authority within a period of three moths at the close of every financial year,an account of the property and assets in his charge, the sums received and disbursed on account of the person with disability and the balance remaining with him

0. Whenever a parent or a relative of a person with disability or a registered organization find that the guardian is :-. abusing or neglecting a person with disability; or a misappropriating or neglecting the property, it may in accordance with the prescribed procedure apply to the committee for the removal of such guardian.

1. Upon receiving such application the committee may, if it is satisfied that there is a ground for removal and for reasons to be recorded in writing, remove such guardian and appoint a new guardian in his place or if such a guardian is not available make such other arrangement as may necessary for the care and protection of person with disability.

2. Any person removed under sub-section (2) shall be bound to deliver the charge of all property of the person with disability to the new guardian, and to account for all moneys received or disbursed by him.

Explanation,- For the Purpose of this chapter, the expression "relative"includes any person related to the person with disability by blood, marriage or adoption.

CHAPTER 7

Accountability and Monitoring

0. The books and documents in the procession of the Board shall be open to inspection by any registered organization

1. Any registered organization can submit a written requisition to the Board the access of any book or document maintained by the Board.

2. The Board shall frame such regulations as it think necessary for allowing the access of any books or document to a registered organization.The Board shall determine by regulations the procedure for evaluating the prefunding status of registered organization seeking financial assistance from it and such regulations may also provide for the guidelines for monitoring and evaluating the activities of the registered organizations who are receiving financial assistance from the Trust.

0. The Board shall in each year hold an annual general meeting of registered organizations, and not , more than six months shall elapse between the date of one annual general meeting and that of the next.

1. A notice of the annual general meeting along with a statement of accounts and records of its activities during the preceding year be sent by the Board to every registered organization at such time as may be determined by regulations.

2. The quorum for such meeting shall be such number of persons of the registered organization as may be determined by regulation.

CHAPTER 8

Finance, Accounts and Audit

The Central Government may, after due appropriation made by parliament by law in his behalf, make to the Trust a one-time contribution of rupees one hundred crores or a corpus, the income where of may be utilized the objects of the Trust under this Act.There shall be constitute a fund to be called the National Trust for Welfare of persons with Autism, Cerebral Palsy, Mental Retardation and Multiple disabilities Fund and there shall be credited thereto- all money received from the Central government;

a. all moneys received by the trust by way of grants, gifts,donation, benefaction, bequests or transfers;

b. all moneys received by the Trust in any other manner or from any other source.

1. All moneys belonging to the fund shall be deposited in such banks or invested in such manner as the Board may, subjects to approval of the Central Government, decide.

2. The funds shall be applied towards meeting the administrative and other expenses of the Trust including expenses incurred in the exercise of its powers and performance of duties by the Board in relation to any of its activities under section 10 or for any thing relatable there to.The Board shall prepare, in such form and at such time in each financial year as may be prescribed, the budget for the next financial year showing the estimated receipt and expenditure of the Trust and shall forward the same to the Central Government,

0. The Board shall maintain proper accounts and other relevant records and prepare an annual statement of accounts of the Trust including the income and expenditure accounts in such form as the Central Government may prescribe and in accordance with such general direction as may be issued by that Government in constitution with the Comptroller and Auditor-General of India.

1. The accounts of the Trust shall be audited by the Comptroller and Auditor General of India at such intervals as may be specified by him and any expenditure incurred by him in connection with such audit shall be payable by the Board of the Comptroller and Auditor-General of India.

2. The Comptroller and Auditor-General of India and by other person appointed by him in connection with the audit of the accounts of the Trust shall have the same rights, privileges and authority in connection with such audit as the Comptroller and Auditor-General of India generally has in connection with the audit of the Government accounts, and in particular, shall have the right to demand and production of books of accounts, connected vouchers and other documents and papers and to inspect any of the offices of the Trust.3. The accounts of the Trust as certified by the Comptroller, and Auditor-General of India or any other person appointed by him in this behalf, together with the audit report thereon, shall be forwarded annually to the Central Government, and that Government shall cause the same to be laid before each House of Parliament. The Board shall prepare every year, in such form within such time as may be prescribed an annual report giving a true and full accounts of its activities during the previous year and copies thereof shall be forward to the Central Government and that Government shall cause the same to be laid before each House of Parliament. All orders and decisions of the Board and instrument issued in the name of the Trust shall be authenticated by the signature of the Chairperson, the Chief Executive Officer or any other officer authorized by the Chairperson, in this behalf. The Board shall furnish to the Central Government such reports, returnsand other information as that Government may require time to time.

CHAPTER 9

Miscellaneous

0. Without prejudice to the foregoing provisions of this Act, the Board shall, in exercise of its power or the performance of its duties under this Act, be bound

by such direction on questions of policy as the Central Government may give in writing it from time to time:Provided that the Board shall, as far as practicable, be given anopportunity to express its views before any direction is given under this sub-section.

1. The decision of the Central Government whether a question is one if policy or not shall be final. If the Central Government on the complaint of a registered organization or otherwise has reason to believe that the Board in unable to perform or has persistently made default in the performance of the duties imposed on it, the Central Government may issue notice to the Board asking why it should not be superseded: Provide that no order superseding the Board shall be made by the Central Government, unless a notice affording reasonable opportunity to the Board has been given in writing that why it should not be superseded.

1. The Central Government after recording reasons in writing and by issuing a notification in the Official Gazette supersede the Board for a period of not more than six months: provided that on the expiration of the period of super session Central Governmentmay reconstitute the Board, in accordance with section 3.

2. Upon the publication of the notification under sub-section (2), all the members of the Board shall, not withstanding that their term of office had not expired as on the date of supersession, vacate their office as such members; a. all the powers and duties which may, buy or under the provision of this Act, be exercised or performed by or on behalf of the trust shall, during the period of supersession, be exercised and performed by such person as the Central Government may direct.

3. On the expiration of the period of super session specified in the notification issued under sub-section (2), the Central Governmentmay extend the period of super session for such further periodas it may consider necessary so that the total period of supersession does not exceed more than six months; or a. reconstitute the Board in the manner provided in section 3. Notwithstanding anything contained in the Income-tax Act, 1961, or any other law for the time being in force relating to tax on income. profit orgains, the Trust shall not be liable to pay income-tax or any other tax inrespect of its income, profits or gains derived. No suit, prosecution or other legal proceeding shall lie against the Central Government or the Trust or any member of the Board or Chief

Executive officer or any officer or other employee of the Trust or anyother person authorized by the Board to perform duties under this. Act for any loss or damage caused or likely to be caused by anything which is done in good faith. Explanation:- For the purpose of this section, the expression "good faith" shall have the same meaning as is assigned to it in the Indian Penal Code. All Members, Chief Executive Officer, other officers and employees of the Trust shall be deemed, when acting or purporting to act in pursuance of any of the provisions of this Act, to be public servant within the meaning of section 21 of the Indian Penal Code.The Board may, by general pr special order in writing, delegate to the Chairperson or any members or any officer of the Trust or any other person subject to such conditions and limitations, if any, as may be specified in the order such of its powers under this Act, (except the power to make regulations under section 35) as it may deem necessary. The Central Government may, by notification in the Official Gazette, make rules for carrying out the provisions of this Act.

1. In particular, and without prejudice to the generality of the foregoing powers, such rules may provide for all or any of the following matters, namely:-. the procedure in accordance with which the person representing registered organization shall be elected under clause (b) of sub-section (4) of section 3;a. the condition of service of the Chairperson and Members under sub-section (2) of section 4; b. the rules procedure in the transaction of business at meeting of the Board under sub-section (2) of section 14;

c. the powers and duties of Chief Executive Officer under subsection (1) of section 8;

d. the form in which an application for guardianship may bemade by a registered organization under sub-section (2) ofsection 23;

e. the procedure in accordance with which a guardian may be removed under section 17;

f. the form in which, and the time within which, the budget of the trust shall be forwarded to the Central Government under section 23;

g. the form in which the annual statement of accounts shall be maintained under sub-section (1) of section 24;

h. the form in which, and the time within which, the annual reports shall be prepared and forwarded under section 25;i. any other matter which is required to be, or may be,prescribed.The Board may, with the previous approval of the

Central Government, by notification in the Official Gazette, make regulations consistent withthis Act and rules generally to carry out the purpose of this Act.In particular, and without prejudice to the generality of the foregoing power, such regulation may provide for all or any of the following matters, namely:-

- the manner and purpose for which a person may be associated under sub-section (5) of section 3;

a. the time and place at which the Board shall meet under subsection (6) of section 4;

b. the terms and conditions of service of, Chief Executive Officer, other officer and employees of the Trust under sub-section (3) of section 8;

c. the form manner in which the application shall be made for registration under sub-section (2) of section 12 and the particulars which such application shall contain under that sub-section;

d. the manner in which application for guardianship shall be received, proceed and decided by the local level committee under sub-section (4) of section 114;

e. the particulars of application and orders passed thereon by the local level committee under sub-section (5) of section 14;

f. the procedure for evaluating the pre-funding status of the registered organization and framing of guidelines for monitoring and evaluating the activities of such registered organizationunder section 19;

g. the time within which notice for annual general meeting shall be sent and quorum for such meeting under sub-section (2) and (3)of section 20; and

h. any other matter which is required to be, or may be provided by regulation.

6.7.5. The Sarva Sikhsha Mission 2000

It pledges that the "SSM will ensure that every child with special needs irrespective of the kind, categories and degree of disability is provided education in appropriate environment."

Sarva Shiksha Abhiyan or SSA, is an Indian Government programme aimed at the universalisation of elementary education "in a time bound manner", as mandated by the 86th Amendment to the Constitution of India making free and compulsory education to children between the ages of 6 to 14 (estimated to be 205 million

children in 2001) a fundamental right. The programme was pioneered by former Indian Prime Minister Atal Bihari Vajpayee.

History

As an intervention programme, SSA has been operational since 2000-2001. However, its roots go back to 1993-1994, when the District Primary Education Programme (DPEP) was launched, with an aim of achieving the objective of universal primary education. DPEP, over several phases, covered 272 districts in 18 states of the country. The expenditure on the programme was shared by the Central Government (85%) and the State Governments. The Central share was funded by a number of external agencies, including the World Bank, DFID and UNICEF. By 2001, more than US$1500 million had been committed to the programme, and 50 million children covered in its ambit. In an impact assessment of Phase I of DPEP, the authors concluded that its net impact on minority children was impressive, while there was little evidence of any impact on the enrolment of girls. Nevertheless, they concluded that the investment in DPEP was not a waste, because it introduced a new approach to primary school interventions in India.

The Right to Education Act (RTE) came into force on 1 April 2010. Some educationists and policy makers believe that, with the passing of this act, SSA has acquired the necessary legal force for its implementation.

Features

Sarva Shiksha Abhiyan (SSA) is a programme for Universal Elementary Education. This programme is also an attempt to provide an opportunity for improving human capabilities to all children through provision of community -owned quality education in a mission mode. It is a response to the demand for quality basic education all over the country.

Main features

1. Programme with a clear time frame for universal elementary education.
2. A response to the demand for quality basic education all over the country.
3. An opportunity for promoting social justice through basic education.
4. A expression of political will for universal elementary education across the country.
5. A partnership between the central, state and the local government.

6. An opportunity for states to develop their own vision of elementary education.
7. An effort at effective involving the Panchyati Raj Institutions, school management Committees, village and urban slum level Education Committees, parent's Teachers' Associations, Mother-Teacher Associations, Tribal Autonomous councils and other grassroots level structures in the management of elementary schools.

Aims

1. To provide useful and elementary education for all children in the 6-14 age group.
2. To bridge social, regional and gender gaps with the active participation of community in the management of schools.
3. To allow children to learn about and master their natural environment in order to develop their potential both spiritually and materially.
4. To inculcate value-based learning this allows children an opportunity to work for each other's well being rather than to permit mere selfish pursuits.
5. To realize the importance of Early Childhood Care and education and looks at the 0-14 age as a continuum.

Objectives

1. All children in school. Education Guarantee Centre, Alternate School, 'Back-to-School' camp by 2003.
2. All children complete five years of primary schooling by 2007.
3. All children complete of elementary schooling by 2010.
4. Focus on elementary education of satisfactory quality with emphasis on education for life.
5. Bridge all gender and social category gaps at primary stage by 2007 and at elementary education level by 2010.
6. Universal retention by 2010.

Aspects

1. It provides a wide convergent frame work for implementation of Elementary Education schemes.

2. It is also a programme with budget provision for strengthening vital areas to achieve universalisation of elementary education.

6.7.6 Right to Education Act (2006)

Right to Education Act

Every child between the ages of 6 to 14 years has the right to free and compulsory education. This is stated as per the 86th Constitution Amendment Act via Article 21A. The Right to Education Act seeks to give effect to this amendment.The government schools shall provide free education to all the children and the schools will be managed by School Management Committees (SMC). Private schools shall admit at least 25% of the children in their schools without any fee.The National Commission for Elementary Education shall be constituted to monitor all aspects of elementary education including quality.

Main Features of Right to Education (RTE) Act, 2009

- Free and compulsory education to all children of India in the 6 to 14 age group.
- No child shall be held back, expelled or required to pass a board examination until the completion of elementary education.
- If a child above 6 years of age has not been admitted in any school or could not complete his or her elementary education, then he or she shall be admitted in a class appropriate to his or her age. However, if a case may be where a child is directly admitted in the class appropriate to his or her age, then, in order to be at par with others, he or she shall have a right to receive special training within such time limits as may be prescribed. Provided further that a child so admitted to elementary education shall be entitled to free education till the completion of elementary education even after 14 years.
- Proof of age for admission: For the purpose of admission to elementary education, the age of a child shall be determined on the basis of the birth certificate issued in accordance with the Provisions of Birth. Deaths and Marriages Registration Act 1856, or on the basis of such other document as may be prescribed.No child shall be denied admission in a school for lack of age proof

- A child who completes elementary education shall be awarded a certificate.
- Call need to be taken for a fixed student-teacher ratio.
- Twenty-five per cent reservation for economically disadvantaged communities in admission to Class I in all private schools is to be done.
- Improvement in the quality of education is important.
- School teachers will need adequate professional degree within five years or else will lose job.
- School infrastructure (where there is a problem) need to be improved in every 3 years, else recognition will be cancelled.
- Financial burden will be shared between the state and the central government.

'Free and Compulsory Elementary Education'

All children between the ages of 6 and 14 shall have the right to free and compulsory elementary education at a neighbourhood school.

There is no direct (school fees) or indirect cost (uniforms, textbooks, mid-day meals, transportation) to be borne by the child or the parents to obtain elementary education. The government will provide schooling free-of-cost until a child's elementary education is completed.

The role envisaged for the community and parents to ensure RTE

The Right of Children to Free and Compulsory Education (RTE) Act 2009 insists upon schools to constitute School Management Committees (SMCs) comprising local authority officials, parents, guardians and teachers. The SMCs shall form School Development Plans and monitor the utilization of government grants and the whole school environment.

RTE also mandates the inclusion of 50 per cent women and parents of children from disadvantaged groups in SMCs. Such community participation will be crucial to ensuring a child friendly "whole school" environment through separate toilet facilities for girls and boys and adequate attention to health, water, sanitation and hygiene issues.

RTE promote Child-Friendly Schools

All schools must comply with infrastructure and teacher norms for an effective learning environment. Two trained teachers will be provided for every sixty students at the primary level.

Teachers are required to attend school regularly and punctually, complete curriculum instruction, assess learning abilities and hold regular parent-teacher meetings. The number of teachers shall be based on the number of students rather than by grade.

The state shall ensure adequate support to teachers leading to improved learning outcomes of children. The community and civil society will have an important role to play in collaboration with the SMCs to ensure school quality with equity. The state will provide the policy framework and create an enabling environment to ensure RTE becomes a reality for every child.

RTE be financed and implemented in India

Central and state governments shall share financial responsibility for RTE. The central government shall prepare estimates of expenditures. State governments will be provided a percentage of these costs.

RTE provides a ripe platform to reach the unreached, with specific provisions for disadvantaged groups, such as child labourers, migrant children, children with special needs, or those who have a "disadvantage owing to social, cultural economical, geographical, linguistic, gender or such other factor." RTE focuses on the quality of teaching and learning, which requires accelerated efforts and substantial reforms:

1. Creative and sustained initiatives are crucial to train more than one million new and untrained teachers within the next five years and to reinforce the skills of in-service teachers to ensure child-friendly education.
2. Families and communities also have a large role to play to ensure child-friendly education for each and every one of the estimated 190 million girls and boys in India who should be in elementary school today.
3. Disparities must be eliminated to assure quality with equity. Investing in preschool is a key strategy in meeting goals.
4. Bringing eight million out-of-school children into classes at the age appropriate level with the support to stay in school and succeed poses a major challenge necessitating flexible, innovative approaches.

Right to Education Bill

In 2002, education was made a fundamental right in the 86th amendment to the Constitution. Six years after an amendment was made in the Indian Constitution, the

union cabinet cleared the Right to Education Bill. Key provisions of the Bill include: 25% reservation in private schools for disadvantaged children from the neighbourhood, at the entry level. The government will reimburse expenditure incurred by schools; no donation or capitation fee on admission; and no interviewing the child or parents as part of the screening process. The Bill also prohibits physical punishment, expulsion or detention of a child and deployment of teachers for non-educational purposes other than census or election duty and disaster relief. Running a school without recognition will attract penal action.

The Right to Education Bill is the enabling legislation to notify the 86th constitutional amendment that gives every child between the age of six and 14 the right to free and compulsory education.

25% quota for poor

The Supreme Court upheld the constitutional validity of Right of Children to Free and Compulsory Education Act, 2009, on April 12, 2012 and directed every school, including privately-run ones, to give immediately free education to students from socially and economically backward classes from class-I till they reach the age of 14 years.

The court threw out the challenge by private unaided schools to Section 12(1)(c) of the Act that says every recognized school imparting elementary education, even if it is an unaided school not receiving any kind of aid or grant to meet its expenses, is obliged to admit disadvantaged boys and girls from their neighbourhood.

School Admissions According to RTE Norms

A series of measures have been taken by the NCPCR to ensure that school admission procedures all over the country are in accordance with the Right of Children to Free and Compulsory Education (RTE) Act, 2009. This was necessitated by the fact that schools in some states were carrying out a screening procedure for admission of children in the elementary stage of education prohibited by the Act.In April, the NCPCR wrote to the chief secretaries of all the states asking them to issue Government Orders to ensure that school admission procedures were in accordance with the RTE Act. This was prompted by the Directorate of Education, Government of National Capital Territory of Delhi (GNCTD), issuing a notice in March inviting applications

for admission to Class VI in the RajkiyaPratibhaVikasVidyalayas run by the Directorate.

The NCPCR's intervention in April came in response to an admission notice that had been issued by the GNCTD's Directorate of Education in all leading newspapers as well as in the Directorate's website, inviting students to purchase application forms costing Rs 25 each and thereafter sit for an entrance exam. Since the RTE Act prohibits any kind of screening procedure and permits admissions into any school through random selection only, the notice was clearly in contravention of the Act.

As the nodal body monitoring the implementation of the RTE Act, the Commission wrote to the Principal Secretary, Education, GNCTD, asking the admission notice be withdrawn and a notice in Conformity with the provisions of the RTE be issued instead. It also requested that Government Orders (GO) be issued to all schools in the GNCTD within a week regarding the provisions of the Act so that the schools made the required changes in their procedures and modes of functioning.

As the Directorate did not comply with this request, it was summoned by the Commission in June and given time till July to re-conduct the admission in accordance with RTE procedures. To ensure that the RTE Act was not similarly contravened in other states, the NCPCR has in its letter to the chief secretaries said that the GO they issue to schools on the matter must specify that:

1. Admission procedures be made in accordance with the RTE Act
2. 25 per cent reservation is ensured for weaker sections in all 'specified category' schools and private unaided schools, and reservation norms for government aided schools are to be followed

Further, private schools recognized by the government must also be mapped out and issued notice regarding provisions in the Act as well as the procedures by which children in the neighbourhood could claim admission to the schools. Also, the task of finalizing State Rules on the RTE Act must be completed at the earliest.

In response to queries regarding Navodaya Schools which have been designated as 'specified category' schools in the RTE Act, the NCPCR clarified that the provisions of Section 13 of RTE Act applied to all schools without exception.

The relevant provision of Section 13 of the Act is:

No school or person shall, while admitting a child, collect any capitation fee and subject the child or his or her parents or guardians to any screening procedure. Any school or person, if in contravention of the provisions of sub-section (1):

1. Receives capitation fee, shall be punishable with fine which may extend to ten times the capitation fee charged
2. Subjects a child to screening procedure shall be punishable with fine which may extend to Rs 25,000 for the first contravention and Rs 50,000 for each subsequent contravention.

No Screening for Admission to Navodaya Schools

The National Commission for Protection of Child Rights (NCPCR) has written to the commissioner, Navodaya Schools, as well as the state education secretaries against any kind of screening for admission of children to elementary education (Classes 1 to eight). The NCPCR intervened to check violation of RTE provisions after it got reports of Navodaya schools screening students in Delhi and other states.

Quoting Section 13 of the RTE Act 2009, the NCPCR has pointed out that while admitting a child to school, the Act prohibits schools or persons from collecting capitation fees or subjecting the child or the parents and guardians to any screening procedure. Any school or person receiving capitation fees, it has pointed out, could be punished with a fine which could be ten times the capitation fee charged.

Subjecting a child to screening could lead to a fine of Rs 25,000 for the first contravention and Rs 50,000 for each subsequent contravention. Section 13 applies to all schools even the Navodaya schools which have been designated special category schools in the RTE Act. Screening procedures being conducted by Navodaya Schools are a violation of the RTE Act, it clarified. NCPCR has also requested state governments to issue orders to all schools regarding the provisions of the Act so that the required changes in their procedures and modes of functioning are made within a week.

Eligibility for Teachers

The following persons shall be eligible for appearing in the TET:

1. A person who has acquired the academic and professional qualifications specified in the NCTE Notification dated 23rd August 2010.
2. A person who is pursuing any of the teacher education courses (recognized

by the NCTE or the RCI, as the case may be) specified in the NCTE Notification dated 23rd August 2010.

3. The eligibility condition for appearing in TET may be relaxed in respect of a State/UT which has been granted relaxation under sub-section (2) of section 23 of the RTE Act. The relaxation will be specified in the Notification issued by the Central Government under that sub-section.

Each child to get free uniform, books under RTE

Each child from class I to class VIII in the country will be provided free textbooks and uniforms, if a raodmap prepared by the Centre to implement the Right To Education Act (RTE) is accepted by the states.

6.7.7. Rashtriya Madhyamik Shiksha Abhiyan (RMSA)2009

Rashtriya Madhyamik Shiksha Abhiyan (RMSA) (English: "National Mission for Secondary Education") is a centrally sponsored scheme of the Ministry of Human Resource Development, Government of India, for the development of secondary education in public schools throughout India. It was launched in March 2009. The implementation of the scheme has started from 2009-2010 to provide conditions for an efficient growth, development and equity for all. The scheme includes a multidimensional research, technical consulting, various implementations and funding support. The principal objectives are to enhance quality of secondary education and increase the total enrollment rate from 52% (as of 2005-2006) to 75% in five years, i.e. from 2009-2014. It aims to provide universal education for all children between 15-16 years of age. The funding from the central ministry is provided through state governments, which establish separate implementing agencies.

Objectives

The objectives of Rashtriya Madhyamik Shiksha Abhiyan can be summarised as follows:[3]

1. To improve quality of education imparted at secondary level through making all secondary schools conform to prescribed norms.
2. To remove gender, socio-economic and disability barriers.
3. Universal access to secondary level education by 2017, i.e., by the end of the XII Five Year Plan.
4. Universal retention by 2020.

Action plans

RMSA is planned to promote secondary education by establishing in every target school the following infrastructure:

1. Additional class rooms
2. Laboratories
3. Libraries
4. Art and crafts room
5. Toilet blocks
6. Drinking water provisions
7. Residential hostels for teachers in remote areas

In addition it aims to provide additional teachers to reduce student-teacher to 30:1, focus on science, mathematics and English education, in-service training of teachers, science laboratories, ICT-enabled education, curriculum reforms, and teaching-learning reforms.

Planning for secondary education

Background

- Since the initiation of the National Policy on Education (NPE), 1986, there has been no major changes in the structure and organization of the secondary and higher secondary school systems under the Ninth Plan period.
- The focus in this plan was on minimising the various disparities, to renew the curricula giving importance to vocationalisation and employment-oriented courses. It also give importance to expanding and diversifying the open learning system, teacher training and ICT. Free education and hostel facilities for girls and integrated education for the disabled children was also brought into highlight, etc.

Participation of private sector

- There was an increased participation of the private sector including non-governmental organisations (NGOs). Currently, these private sectors manage around 51% of the secondary schools and 58% of the higher secondary schools.
- Opportunities were provided for those children who were not able to enroll themselves in formal education systems through national and state open schools by utilising contact-centres and multi-media packages.

- It highly emphasized on the content, process and the quality of education especially the environment education, science, mathematics and computer literacy with the financial help from the central government.
- After the revised NPE policy, 1992, new initiatives like revision of curriculum, resource centres for value education and National Centre for Computer-aided Education etc. have been taken up.
- The appeal lacks in the vocationalisation of education due to the lack of manpower demand and academic restraints etc. Hence, by 2000, only 10% of the students opt for the vocational streams against 25%.

Planning for children with special needs (CWSN)

- With the enactment of the Persons with Disabilities Act, 1995, the education for the CWSN received am impetus. This act entrusts certain governments and authorities for the provision of free access for these children towards education, allotted lands for certain purposes, non-discrimination in transports, financial incentive for them to undertake research etc.
- This scheme has also taken up programmes for the attitudinal changes and capacity building among teachers for the sake of these children.[7]

Four major heads

- **Quality improvement:**

In school, there was promotion of the science laboratories, environmental education, promotion of yoga, as well as centrally sponsored schemes of population education project, international mathematics and science olympiads. The state governments provide in-service training for the teachers and provide infrastructure and research inputs.

- **Information communication technologies (ICT):**

ICT comprises the centrally sponsored schemes like computer education and literacy in schools (CLASS) and educational technology (ET) which familiarizes the student with Information technology (IT). Due to the rise in IT demand in today's world, a major importance is given on it. Components of a merged scheme ICT in school include a) funding support towards computer education plans; b) strengthening and reorientation of the staffs of SIETS - state institutes of education and training; c) there is digitalisation of SIETs audio and video cassettes with the partnership of NGOs; and d) management of internet-based education by SIETs.

- **Access and equity:**

RMSA not only emphasizes on providing secondary education for the special focus groups that include scheduled tribe and scheduled caste groups, minority girls and CWSN children, but it also give importance on removing the existing disparities in socio-economic and gender background in the secondary level of education. They are termed as the vulnerable/ disadvantaged group. Certain strategies were implemented to provide free access towards secondary education and they are given as following steps:

1. Identification of the disadvantaged groups: For this purpose, educational indicators like gross enrollment ratio (GER), net enrollment ratio (NER), drop-out rate, retention rate, gender parity index (GPI), gender gap, etc. were analysed.
2. Need assessment: This is the critical step to prepare for the equity plan where the factors affecting the education of this group of children were evaluated with the involvement of the community members, teachers, civil society, etc.
3. Strategising for the addressing gaps: Since there are multiple interwoven factors that cause the un-equitable condition in this scenario, the strategy was called to have a set of multi-dimensional activities.
4. Project-based proposal: Development of a project-based strategy enables the RMSA to call for an evidence-based and outcome-oriented strategy.

- **Integrated education for disabled children (IEDC):**

Inclusive education have been highlighted to bring about expansion in terms of meeting/catering to the needs of the mentally and physically disadvantaged children. This schemes continues to be a separate centrally sponsored scheme. It includes several components for convergence with integrated child development services for early interventions, Sarva Shiksha Abhiyan (SSA) for the particular group at the elementary level, and special schools.

Funding method

The Ministry of Human Resource Development directly provides funds to the state governments. Each state government then release the funds to the approved implementing agencies or institutions. During the XI Five Year Plan the central government provided 75% of the total fund for each state, while 25% was borne by

the state as matching share. However, in the remote northeastern states and Sikkim the matching share was waived to 10%.[6][9]

Achievements

The major achievements of RMSA as of 2015-2016 report are:

1. New school:11,577 new secondary schools were approved out of which, 10082 are functional.
2. Strengthening of schools: 337,731 have been approved in terms of infrastructure development under this scheme. The details is as follows:

- Additional classroom: Out of 52750 approved, 20,839 were completed and 16,774 are under progress.
- Science laboratory: Out of 25,948 approved, 10,107 were completed and 8532 are under progress.
- Computer room: Out of 21,864 approved, 6920 were completed and 6297 are under progress.
- Library room: Out of 27,428 approved, 10,133 were completed and 8929 are under progress.
- Art/Craft room: Out of 31,453 approved, 12,062 were completed and 9686 are under progress.
- Drinking water: Out of 12,327 approved, 7096 were completed and 2507 are under progress.
- Teacher quarters: Out of 5408 approved, 623 were completed and 509 are under progress.
- Major repair: Out of 2975 approved, 1313 were completed and 271 are under progress.

Rise of RMSA

Due to the impact of the programmes undertaken for the universalisation of elementary education, there is a rise in the demand of education at the secondary level. Despite the increase in the number of secondary schools, the spread of the secondary education throughout the country remains uneven. There are regional disparities, differences in the socio-economic background and in Union Territories. There was narrowing of this significant gender gaps in existing condition. In the

Tenth Plan, the key was foccussed on a quality education at all levels and to pursuit excellence accordingly.

6.7.8. Inclusive Education for Disabled at Secendary stage (IEDSS) 2013

The Scheme of Inclusive Education for Disabled at Secondary Stage (IEDSS) has been launched from the year 2009-10. This Scheme replaces the earlier scheme of Integrated Education for Disabled Children (IEDC) and provides assistance for the inclusive education of the disabled children in classes IX-XII. This scheme now subsumed under RashtriyaMadhyamikShikshaAbhiyan (RMSA) from 2013. The States/ UTs are also in the process of subsuming under RMSA as RMSA subsumed Scheme.

Aims

To enabled all students with disabilities, to pursue further four years of secondary schooling after completing eight years of elementary schooling in an inclusive and enabling environment.

Objectives

The scheme covers all children studying at the secondary stage in Government, local body and Government-aided schools, with one or more disabilities as defined under the Persons with Disabilities Act (1995) and the National Trust Act (1999) in the class IX to XII, namely blindness, low vision, leprosy cured, hearing impairment, locomotory disabilities, mental retardation, mental illness, autism, and cerebral palsy and may eventually cover speech impairment, learning disabilities, etc. Girls with the disabilities receive special focus to help them gain access to secondary schools, as also to information and guidance for developing their potential. Setting up of Model inclusive schools in every State is envisaged under the scheme.

Components

- Student-oriented components, such as medical and educational assessment, books and stationery, uniforms, transport allowance, reader allowance, stipend for girls, support services, assistive devices, boarding the lodging facility, therapeutic services, teaching learning materials, etc.
- Other components include appointment of special education teachers, allowances for general teachers for teaching such children, teacher training, orientation of school administrators, establishment of resource room, providing barrier free environment, etc.

Implementing Agency

The School Education Department of the State Governments/Union Territory (UT) Administrations are the implementing agencies. They may involve NGOs having experience in the field of education of the disabled in the implementation of the scheme.

Financial Assistance

Central assistance for all items covered in the scheme is on 100 percent basis. The State governments are only required to make provisions for scholarship of Rs. 600/- per disabled child per annum.

6.8 Let us Sum Up

International Level

1. Universal Declaration of Human Rights (1948): It proclaimed the right of every child to and education.
2. UN Convention on the Rights of the Child (1989): It states that education is the right of every child.
3. UN Declaration on Education for all (Jometien Declaration) - 1990: It emphasizes education for all including children with disabilities. It states, "the learning needs of the disabled demand special attention, steps need to be taken to provide equal access to education to every category of disabled person as an integrated part of education systems.
4. UN Declaration Standard Rules on equalization of opportunities for person with disabilities - 1993: It is important resolution for improving the education condition for person with disabilities. It states, "State should recognize the principal of equal, primary, secondary and tertiary educational opportunities for children, youth and adults with disabilities, in integrated setting. They should ensure that education of person with disabilities is on integrated part of the education system.
5. The Salamanca Declaration (1994): It endorsed inclusive education and stated that inclusion and participation are essential to human rights.

National Level

The basic structure of the constitution of India, as reflected in the preamble ensures social, economic and political justice as well as equality of status and equal opportunity to all citizens of India. It is thus constitutional obligation of equality of

all citizens including persons with disabilities and other marginalized groups of people.

Article 45 requires the state to make provision within 10 years for free and compulsory education for all children until they complete the age of 14 years. The Constitution (86th Amendment Act ,2002)) has substituted a new article for article 45 which provides, "The state shall endeavour to provide early childhood care and education for all children until they complete the age of six years."

In 1964, the Kothari Commission (1964-66) recommended placement of the disabled child, as far as possible in ordinary schools. The Integrated Education for Disabled Children (IEDC) - 1974

The centrally sponsored scheme IEDC launched in 1974 to admit children with disabilities in regular schools.

The District Primary Education Programme (DPEP) - 1985.

It acknowledges the fact that universalization of education is possible only if it includes children with disabilities.

The National Policy on Education (NPE) - 1985

It included a full chapter on "Education of the Handicapped and formulated guidelines for action. The NPE (1986) strongly emphasized the need for the expansion of integrated education programmes. The Project Integrated Education for Disabled (PIED) - 1987

It was launched in 1987, which encourages all schools in a neighbourhood to enroll children with disabilities.

The Rehabilitation Council of India (RCI) Act - 1992

In 1992, `the RCI act was passed in the parliament to regulate the manpower development and funding research programme in the field of education of children with special needs.

The Person with Disabilities (Equal Opportunities Protection of Rights and Full Participation) Act 1995

The main purpose of this act is to define responsibilities of Central Governments and State Governments with regard to services for disabled persons. It recommends making changes in assessment and curriculum and removing architecture barriers to support inclusion. It also recommends providing free books, uniform, etc.

The National Trust Act

It recommends promotion of children with autism, cerebral palsy, mental retardation and multiple disabilities. It runs many programmes, which promote independent living community for people with disabilities by creating conductive environment in the community.

The Sarva Sikhsha Mission

It pledges that the "SSM will ensure that every child with special needs irrespective of the kind, categories and degree of disability is provided education in appropriate environment."

The Amendment of the Constitution in 2001

It makes education a fundamental right for those in the age 6-14 age group which covers children with disabilities.

The National policy for Persons with Disabilities

It has a section on education, stating, "There is a need for mainstreaming of the person with disabilities in the general education system through inclusive education. It also mentions that children learns but in the company of their peers.

Right to Education

The Constitution (Eighty-sixth Amendment) Act, 2002 inserted Article 21-A in the Constitution of India to provide free and compulsory education of all children in the age group of six to fourteen years as a Fundamental Right in such a manner as the State may, by law, determine. The Right of Children to Free and Compulsory Education (RTE) Act, 2009, which represents the consequential legislation envisaged under Article 21-A, means that every child has a right to full time elementary education of satisfactory and equitable quality in a formal school which satisfies certain essential norms and standards.

RMSA 2009

This scheme was launched in March, 2009 with the objective to enhance access to secondary education and to improve its quality. The implementation of the scheme started from 2009-10. The other objectives include improving quality of education

imparted at secondary level through making all secondary schools conform to prescribed norms, removing gender, socio-economic and disability barriers, providing universal access to secondary level education by 2017, i.e., by the end of 12th Five Year Plan and achieving universal retention by 2020.

A Comprehensive Plan of Action for Children and youth with Disabilities

It was also presented by the minister for Human Resource Development, Arjun Singh in March 2005. This Action Plan advocated inclusive education and envisages making all schools "disabled friendly" by 2020.

6.9 "Check your progress"

1. Discuss about Universal Declaration of Human Rights (1948)

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2. Discuss about UNCRPD 2006

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3. Discuss about Salamanca Framework 1994

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4. Write an essay about Kothari Commission 1964

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5. Write an essay National Curriculum Framework 2005

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6. Write a short note

IEDC(1974), RCI (1992), PWD (1995), RMSA (2009) IEDSS (2013)

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Module - 2

Education of the Differently Abled Children

Unit-1 □ Visual Impairment—Nature and Assessment

Unit-1.1 □ Process of Seeing and Common Eye Disorders in India

Structure:

1.1 Introduction:

There is a kind of perception that takes place as our brain decides what it is we are actually seeing. You can actually watch this process of settling upon the right image if you look for it. It is especially pronounced if the brain can't immediately decide what it's viewing. For example, if you see something in the distance you can't quite make out the gestalt changes from image to image until the brain is satisfied that it is the correct one. Try to catch it sometime. In any case, we see what we have been taught to see. That is, the process of seeing is learned from the time we are infants. This is basically why all of us see the same things, and why anyone who doesn't is considered crazy. Artists have long played on the edge of perceptions that are not readily available to the rest of us. Impressionism is a good example. These artists realized that light affected colour and form in unimaginable ways (at that point in the history of art), and painted impressionistic scenes so the rest of us could also see them. Of course, now most of us do, if we allow ourselves to. This really is the essential point—allowing ourselves to. We are much more resilient and stable than we imagine. We can all handle more uncertainty than we imagine. Just because we see or think something out of the ordinary does not mean we're insane. It's a normal part of perception.

1.2 Objectives:

After going through this unit you should be able to:

- Name and explain the different types of sensory impairments with reference to hearing impairment and Visual impairment.
- Address the issues & challenges in educating students with sensory impairments.
- Describe the nature, characteristics & assessment of students with low vision & visual impairment and hearing impairment.
- Examine educational placement and suggest curricular strategies for students with sensory impairments.
- Enumerate the characteristics and types of learning disability.
- Describe the tools, areas of assessment and apply intervention strategies to enhance Learning
- Explain the characteristics and types of Autism Spectrum Disorder.
- Specify and analyse the tools, areas of assessment and apply intervention strategies.

1.3 Anatomy And Physiologhy Of Seeing Media

The process of perception is done through eye which is the predominant sense organ of human being. It is a very sensitive organ in our body to be taken care of properly. Around 85% of the information is received through our eyes. Sight is the sense through which the brain received approximately 75% of its information. The eye is essentially formed from both ectoderm and mesoderm. The eye collects information about size, shape and colour and transmits those to brain where these are interpreted.

So it must be said that eye is the apparatus for seeing. The structure of the orbit, the ocular adnexa, the ocular muscles, the nerves and the blood supply system are so as to help the eyeball to see and to protect it from injury. To understand the mechanism of vision we have to understand the function of the eyeball, the ocular adnexa (the eyelids, the conjunctiva and the lacrimal system) and the ocular muscles.

1.4 Different Parts of Eye And Their Function in Seeing:

The eyeball:

The eyeball rests in a soft cushion of fat protected by the bony orbit of the skull. It is almost a perfect sphere with clean window in front of cornea. The parts of eyeball are as follows-

Cornea

The cornea has an important role in image formation; it forms a primary refractive element in the eye. So it says that cornea is a clear front window of the eye which transmits and focuses (i.e., sharpness or clarity) light into the eye.

Iris:

The coloured part of the eye which helps regulate the amount of light entering the eye. When there is bright light, the iris closes the pupil to let in less light. And when there is low light, the iris opens up the pupil to let in more light.

Pupil:

The dark centre opening in the middle of the iris. The pupil changes size to adjust for the amount of light available (smaller for bright light and larger for low light). This opening and closing of light into the eye is much like the aperture in most 35 mm cameras which lets in more or less light depending upon the conditions.

Lens:

Focuses light rays onto the retina. The lens is transparent, and can be replaced if necessary. The lens is not noticed normally because it is hidden within the dark cavity of the inner eye. Intraocular lenses are used to replace lenses clouded by cataracts.

Sclera:

The white outer coat of the eye, surrounding the iris. It is similar to the cornea, except that it is vascular, and has dense, irregular, fibrous connective tissue.

Choroid:

Layer containing blood vessels that lines the back of the eye and is located between the retina (the inner light-sensitive layer) and the sclera (the outer white eye wall).

Retina:

The nerve layer lining the back of the eye. The retina senses light and creates electrical impulses that are sent through the optic nerve to the brain.

Macula:

The area in the retina that contains special light-sensitive cells. In the macula these light-sensitive cells allow us to see fine details clearly in the centre of our visual field.

Fovea:

The centre of the macula which provides the sharp vision.

Ciliary Body

Structure containing muscle and is located behind the iris, which focuses the lens.

Aqueous Humour :

Produced by ciliary processes of ciliary body. It provides nutrients for lens and cornea. It also maintains intraocular pressure (25mm.Hg), and is replaced several times a day 2 μ 1/min).

Vitreous Humour:

The, clear, gelatinous substance filling the central cavity of the eye secreted by the ciliary body up to the time of maturity. It has very loose connective tissue: contains water, hyalouronic acid and collagen. Pressure from the vitreous humour prevents retinal detachment. It supports the lens anteriorly and the retina posteriorly. It contains a hyaloid canal, which is a remnant of blood vessels during development.

Optic Nerve:

A bundle of more than a million nerve fibers carrying visual messages from the retina to the brain. (In order to see, we must have light and our eyes must be connected to the brain.) Your brain actually controls what you see, since it combines images. The retina sees images upside down but the brain turns images right side up. This reversal of the images that we see is much like a mirror in a camera.

Ocular adnexa:

Accessory structures of the eye, including the eyelids, conjunctiva and the lacrimal apparatus.

The eyelids:

The chief function of the lids is to protect the eyes from injury and excessive light. The eyebrow and eyelashes also participate in protective role.

Conjunctiva:

It is continuous with the skin of the eyelids. The palpebral Conjunctiva is the part of the conjunctiva that covers the inner surface of the Eyelid; the bulbar conjunctiva covers the surface of the eyeball. It is lined by stratified squamous epithelium, and contains goblet cells, which secrete the deepest, mucus, layer of tear film, which adheres to the surface of the globe. It is highly vascular. The conjunctive blends with the skin of the lid margins as well as with the corneal epithelium. It is also continuous, via the lacrimal puncta and canaliculi with the mucosa of the nasolacrimal sac and duct and hence nose.

The lacrimal system:

The two main part of lacrimal system are (a) the lacrimal gland which secretes tears and (b) the lacrimal ducts which carry the tears from the eye into cavity of the nose.

It also contains three layers of the tear film:

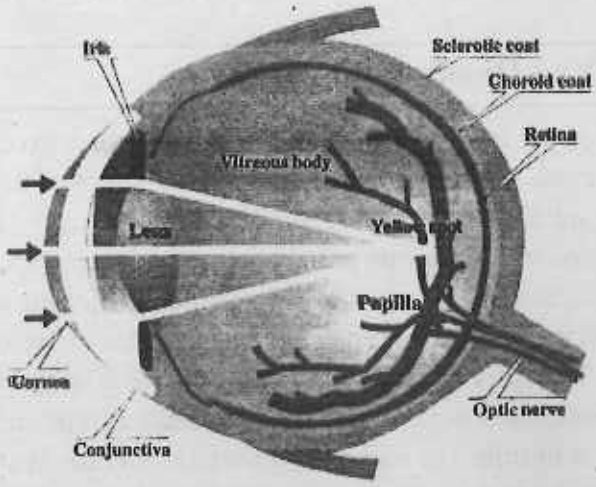
1. Deep mucous: from conjunctival goblet cells, adheres tears to the conjunctiva
   a. Middle aqueous: from main and third eyelid lacrimal glands; it cleanses, oxygenates and fills optimal defects.
3. Superficial oily layer: from tarsal glands prevents evaporation

Extra ocular muscles:

The muscles which control the movements of eye ball are six in number, all named by their positions with regard to eyeball. These are as follows-

1. Dorsal rectus muscle
2. Ventral rectus muscle
3. Medial rectus muscle
4. Lateral rectus muscle
5. Dorsal oblique muscle
6. Ventral oblique muscle

Usually carrying out the eye movements two or more muscles work together. In addition to the co-ordinated action of muscles in one eye, it is essential for proper vision that there be perfectly co-ordinated muscular action in both eyes.



1.5 Process of Seeing:

From the above discussion we can compare the eye with a camera. Vision is a complex function that requires more than the eye alone. The act of seeing requires light to see by and the brain to interpret what is seen. The light rays reflect from an object in a person's field of vision, fall on the eyes. The rays pass through the cornea through the aqueous humour and through the pupil of the colour iris which dilates or contracts to control light in accordance to the brightness of the object. In addition the pupil contracts when it looks something small in order to increase the sharpness.

The rays then pass through the crystalline lens when the eye is relaxed and looking into the far distance the rays of light are focused on to the retina. When we wish to look at something nearer say at 6ft the focus of the lens is automatically adjusted by the surrounding ciliary muscles. The fluid in the aqueous humours in front of the lens and the vitreous body behind the lens allow it to expand or contract easily. This process of focusing is called accommodation. The cornea and the lens combine to bend the light rays as they pass through. The rays pass through the vitreous body and penetrate the retina, where they set up a photochemical response in the outer most layers, there stimulating the rods and cones. The impulse is picked by the retinal nerve fibres and pass along the optic nerve to the brain where upside down image is formed. Based on experience, the inverted image is psychologically transposed.

The eyes move together and send the brain almost identical images. The brain then joins these two images into a single mental picture. The slight difference in the images is needed to produce stereographic vision. By this long process we are able to see.

1.6 Common Eye Disoders in India:

Eyesight is one of the most precious gifts that nature has given to mankind. It's only because of the eyes; one can enjoy the beauty of this world. It's impossible to imagine life without sight. Though a very small part of body, eye is one of the most complex human organs. It has various parts, all of which are responsible for normal vision. Smallest structural or functional alteration in the functioning of an eye can cause tremendous visual disturbances. This type of visual disturbance makes people helpless and also dependable. The other name of visual disturbance is called visual disorder .on the other hand it is also known as refractive error. In India maximum cause of the adult blind is refractive error or injury or accident. If they are identified at first time there is a chance for curing. But due to lack of knowledge or person's negligence most of the

time these disorders are not properly treated or identified.

To see external object clearly, it is necessary that sharp images of objects must be formed upon the retina. The cornea, the aqueous humour, the crystalline lens and the vitreous body act together as refractive media to bring parallel rays of light reflected from external object to a focus on the retina. The images become sharp in the macula. The normal eye is called emmetropic while the abnormal condition is called errors of refraction or ametropia. Refractive error or need of glasses is one of the most common eye problems. It can start at any age. This is due to alteration in length, shape & / or capacity of eyes.

What is refraction?

Refraction is the bending of light as it passes through one object to another. Vision occurs when light rays are bent (refracted) as they pass through the cornea and the lens. The light is then focused on the retina. The retina converts the light-rays into messages that are sent through the optic nerve to the brain. The brain interprets these messages into the images we see.

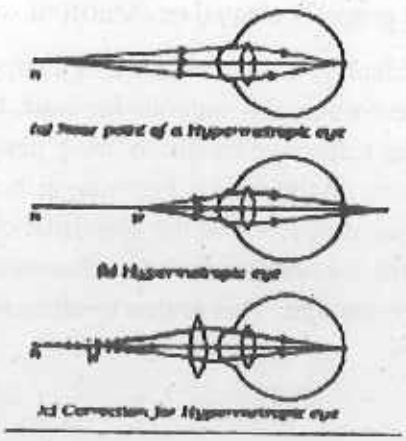
What are refractive errors?

Refractive errors occur when the shape of the eye prevents light from focusing directly on the retina. The length of the eyeball (longer or shorter), changes in the shape of the cornea, or aging of the lens can cause refractive errors.

Not all eyes are optically perfect and consequently light rays may not be brought accurately to focus on the retina. Faulty optical conditions, or refractive errors may be classified into four basic categories. These are as follows-

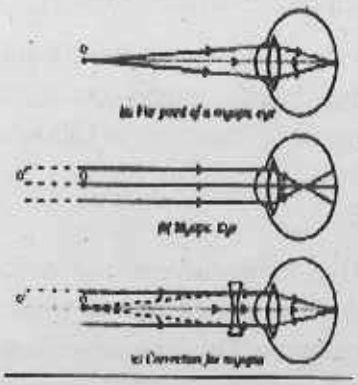
Hyperopia (farsightedness):

It is a common type of refractive error where distant objects may be seen more clearly than objects that are near. When the optics are too weak for the length of the eyeball, one has hyperopia or farsightedness. This can arise from a cornea or crystalline lens with not enough curvature (refractive hyperopia) or an eyeball that is too short (axial hyperopia) However, people experience hyperopia differently. Some people may not notice any problems with their vision, especially when they are young. For people with significant hyperopia, vision can be blurry for objects at any distance, near or far. This can be corrected with convex lenses which cause light rays to converge prior to hitting the cornea.



Myopia (nearsightedness)

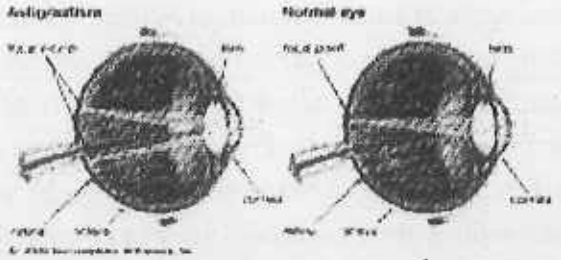
It is a condition where objects up close appear clearly, while objects far away appear blurry. When the optics is too powerful for the length of the eyeball one has myopia or nearsightedness. This can arise from a cornea or crystalline lens with too much curvature (refractive myopia) or an eyeball that is too long (axial myopia). With myopia, light comes to focus in front of the retina instead of on the retina Myopia can easily be corrected with a concave lens which causes the divergence of light rays before they reach the cornea.



Astigmatism

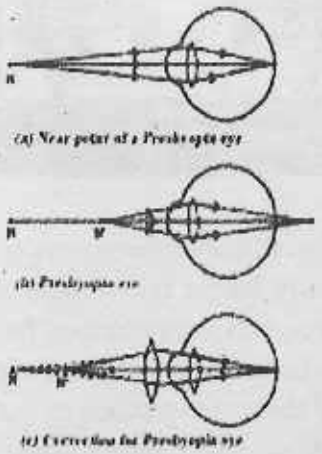
It is a condition in which the eye does not focus light evenly onto the retina, the light-sensitive tissue at the back of the eye. This can cause images to appear blurry and stretched out. Cylindrical errors cause astigmatism, when the optical power of the eye is too powerful or too weak across one meridian, such as if the corneal curvature tends

towards a cylindrical shape. The angle between that meridian and the horizontal is known as the axis of the cylinder. A person with astigmatic refractive error sees lines of a particular orientation less clearly than lines at right angles to them. This defect can be corrected by refracting light more in one meridian than the other. Cylindrical lenses serve this purpose.



Presbyopia

It is an age-related condition in which the ability to focus up close becomes more difficult. As the eye ages, the lens can no longer change shape enough to allow the eye to focus close objects clearly. The individual would experience difficulty in near vision, often relieved by reading glasses, bifocal, or progressive lenses.



Other type of refractive errors are-

Amblyopia:

Amblyopia is any reduction in visual acuity in one or both eyes. This condition of mentally shutting out the images of one eye is also known as lazy eye. Amblyopia in young children may not present a permanent reduction in vision since correction may

be possible. Treatment may consist of glasses, patching, surgery or a combination of procedures including eye exercises.

Squints (strabismus):

Defects of eye muscles are cause for eye disorder. If one or more muscles which help rotate the eye become weak or paralysed both eyes then fail to focus on some object at the same time or same angle. The condition is known as strabismus. It means that in coordinated action of the muscles cause the failure of the visual axes of the two eyes to meet at the objective point. Squint is convergent when the eyes turn towards the medial line; it is divergent if the eyes turn outward. Squint in children may some time lead to serious visual impairment as the brain tends to accept only the good images of the weaker or squinted eye. Due to disuse the weak eye may reduce to low vision.

Nystagmus:

It is the term applied to rapid oscillatory movements of the eye ball. The movements are involuntary. They are usually lateral but vertical, rotator and mixed rotator and lateral or vertical nystagmus occurs. Nystagmus may be congenital, early infantile or it may be acquired. Nystagmus is present in most cases of total colour blindness in which vision is carried out by the rod alone. In some cases head nodding with Nystagmus is congenital or hereditary a condition which persists throughout life.

1.7 Symptoms and Treatment of Refractive Error:

What are the signs and symptoms of refractive errors?

Blurred vision is the most common symptom of refractive errors. Other symptoms may include: Double vision, Haziness, Glare or halos around bright lights, Squinting, Headaches and Eye strain.

How are refractive errors diagnosed?
An eye care professional can diagnose refractive errors during a comprehensive dilated eye examination. People with a refractive error often visit their eye care professional with complaints of visual discomfort or blurred vision. However, some people don't know they aren't seeing as clearly as they could.

How are refractive errors treated?
Refractive errors can be corrected with eyeglasses, contact lenses, or surgery.

Eyeglasses:

These are the simplest and safest way to correct refractive errors. Your eye care professional can prescribe appropriate lenses to correct your refractive error and give you optimal vision.

Contact Lenses:
It works by becoming the first refractive surface for light rays entering the eye, causing a more precise refraction or focus. In many cases, contact lenses provide clearer vision, a wider field of vision, and greater comfort. They are a safe and effective option if fitted and used properly. It is very important to wash your hands and clean your lenses as instructed in order to reduce the risk of infection. If you have certain eye conditions you may not be able to wear contact lenses. Discuss this with your eye care professional.

Refractive Surgery:
It aims to change the shape of the cornea permanently. This change in eye shape restores the focusing power of the eye by allowing the light rays to focus precisely on the retina for improved vision. There are many types of refractive surgeries. Your eye care professional can help you decide if surgery is an option for you.

Unit : 1.2 □ Blindness and Low Vision-definition and Classification

Structure:

1.2.1 Introduction

It is a true phenomenon that visual impairment tends to evoke more awkwardness from us than any other disability. For one thing, blindness is visible. The blind person is usually not one who can easily weave himself into the fabric of a crowd. Unlike many other exceptional people he stands out. The visually impaired person, however, has a variety of symbols. Cane, thick or darkened glasses, a guide dog etc.

1.2.2 Objectives

After going through this unit you should be able to:

1. Draw out the position of impairment
2. Know about blind
3. Tell about low vision
4. Also gather knowledge about visual classification

1.2.3 A Brief Historical Review:

The history of Special Education in genera] and of visually impaired children in particular had visualized many ups and downs in its progressive phase of development. Globally it evolved through the following five stages.

1) **Pre-Christian Era-**
   During this stage, disability was viewed as punishment of past sins and nobody wanted to interfere in the justice meted out to the disabled persons by God.
2) **Christian Era-**
   In this stage they are protected and pitied to reduce their pains and miseries.
3) **Dawn of 19th century-**
   Institutions were established to provide them separate education.
4) **Late 20th century-**
   The movement started to integrate them in the society.
5) **Present age-**
   The concept of special and integrated system of education has been emerged out on the basis of needs of disabled persons.

1.2.4 Definitions:

1.2.4.1 Blindness:

The term blindness is used for complete or nearly complete vision loss.

Legal/ medical definitions

The current definition does not make a distinction between those who have "irreversible" blindness (NO perception of light) and those that have light perception but are still less than 3/60 in the better eye. The legal definition involves assessment of visual acuity and field of vision. It is used to determine whether or not an individual qualifies for legal benefits. The American Medical Association (AMA) proposed this definition in 1934.this definition is now accepted by American Foundation for the Blind (AFB) and other Blind Association in different countries.

In India, the broad definition of visual impairment as adopted in the Persons with Disabilities Act (PWD), 1995 as well as under the National Programme for Control of Blindness (NPCB) is given as " Blindness refers to a condition where a person suffers from any of the following conditions:

Total absence of sight or Visual acuity not exceeding 6/60 or 20/200 (Snellen) in the better eye even with correction lenses or limitation of the field of vision subtending and angle of 20 degree or worse."

Educational/functional definition

Many educators are disinterested in the legal or medical definition of blindness. Their argument that visual acuity is not very accurate prediction of how one will function or effectively use the remaining sight he has. A common misconception is that legally blind having absolutely no vision, the vast majority are able to see.

Recognizing the limitations of the legal definition of blindness and partially sightedness, many have favoured an educational definition.

For educational purpose, "the blind are those who are so severely impaired that they must be taught to read by Braille, while the partially sighted can read print by using magnifying glasses or books with large print."

The educational definition of visual impairment considers the extent to which the child's vision affects learning and makes special methods or materials necessary. Educators often differentiate between blind and low vision students. For deciding the blindness, the visual acuity as well as field of vision has been considered.

Visual acuity:

It refers to the ability of the eye to see details. The visual acuity for distance is measured as the maximum distance at which a person can see a certain object, divided by the maximum distance at which a person with normal eyesight can see the same. Thus a visual acuity of 6/60 means that the person examined cannot see, at a distance of 6 meters, the object, which a person with normal eyesight would be able to see at 60 meters.

Visual efficiency:

Visual efficiency is the extent to which available vision is used effectively. The term visual efficiency includes visual acuity at long and at short, control of eye movements, accommodative ability etc. this also includes the processing ability of the brain. Visual efficiency is unique to each child. The visual efficiency can be developed by training but cannot be measured or predicted clinically with any accuracy by medical, psychological, or educational personnel.

As defined by Barrage, Visual efficiency includes such skills as controlling eye movements, adapting to the visual impairment, paying attention to visual stimuli and

processing visual information rapidly. The fundamental premise in developing visual efficiency is that children learn to see and must be actively involved in using their own vision.

Field vision

It refers to the field which both the eyes can easily see in the front. The normal field of vision is ISO degrees in front of eye.

Visual functioning

The visual functioning refers to the degree to which ability of a person to use vision for all activities.

1.2.4.2 Low vision

Low vision is a term often used interchangeably with visual impairment and refers to a loss of vision that may be severe enough to hinder an individual's ability to complete daily activities such as reading, cooking, or walking outside safely, while still retaining some degree of useable vision.

The Person with Disabilities Act, 1995 also recognizes LOW VISION as a category of disability and defines it as follows:

"Person with low vision means a person with impairment of visual functioning even after treatment or standard refractive correction but who uses or is potentially capable of using vision for the planning or execution of a task with appropriate assistive device."

This definition is incomplete as it inadvertently omits quantification of the acuity as well as the field of vision as is done in the case of the WHO definition. It is desirable to modify this definition and the following quantification should be added:

"Low vision are those who suffer visual acuity between 20/200 to 70/200(Snellen) or 6/18to 6/60 in the better eye after the best possible correction or a Field of vision between 20 to 30 degrees."

In the practice of eye care "LOW VISION" has a specific meaning as defined by WHO. This is as follows:

"A person with low vision is one who has impairment of visual functioning even after treatment and/or standard refractive correction, and has a visual acuity of less than 6/18 to light perception, or a visual field of less than 10 degree from the point of fixation,

but who uses, or is potentially able to use, vision for planning and/or execution of a task." The points emphasize are that there is significantly reduced vision visual performance is affected but there still is vision that can be used.

For deciding the low vision, the residual vision as well as functional vision has been considered.

Residual vision

The use of remaining vision by the visually impaired individuals to perform their daily activities is known as residual vision.

Functional vision

Functional vision is the use of vision for particular activities. Functional visual skills are required to carry out every day activities.

Central Scotoma

A hazy or dark hole appears in the centre of objects. Causes include macular degeneration and optic atrophy.

Tunnel vision

Loss of peripheral vision causes a restricted field of vision, Objects in the centre remain visible. Causes include glaucoma and retinitis pigmentosa.

Accommodation

If while looking at an object situated at infinity, the gaze be transferred to an object near at hand, some readjustment of the power of the crystalline lens will have to occur, otherwise the image will fall behind the retina. This adjustment of the power of the lens is called accommodation.

1.2.5 Classification:

The importance of functional definition lies in the 'label' people are given. Someone with visual acuity of 2/60 can have useful vision, for example, for mobility. However, he or she will be labelled blind person. The consequence is this person is then treated as if he or she is blind. This ignores the usable vision. There should be difference between legal blindness and functional blindness or low vision. The World Health Organization uses the following classifications of visual impairment. When the vision in the better

eye with best possible glasses correction is: 20/30 to 20/60 : is considered mild vision loss, or near-normal vision 20/70 to 20/160 : is considered moderate visual impairment, or moderate low vision 20/200 to 20/400 : is considered severe visual impairment, or severe low vision 20/500 to 20/1,000 : is considered profound visual impairment, or profound low vision More than 20/1,000 : is considered near-total visual impairment, or near total blindness No light perception : is considered total visual impairment, or total blindness. Blindness is defined by the World Health Organization as vision in a person's best eye of less than 20/500 or a visual field of less than 10 degrees

Category	Corrected Visual acuity in the better eye	WHO's Defmition(standard)	Working Definition	Indian Definition
0	6/6-6/18	Normal	Normal	Normal
1	<6/ 18-6/60	Visual impairment	Low vision	Low vision
2	<6/60-3/60	Severe visual impairment	Low vision	Blind
3	<3/60-1/60	Blind	Low vision	Blind
4	<1/60-PL	Blind	Low vision	Blind
5	NPL	Blind	Total Blindness	Total Blindness

The WHO standard definition defines blindness as visual acuity of less than 3/60 in the better eye with the best possible correction as compared to that of 6/60 in India. The WHO functional definition however considers blindness starting at light perception or when a person has no usable vision. Similarly a person with visual acuity better than 3/60 but equal or less than 6/60 is graded as "blind" in India, while WHO grades him as low vision.

In India a person with a visual acuity <6/60 is legally blind, which enables to receive certain services and financial benefits. However a person who is legally blind can still have useful vision to do certain tasks as can be seen in the working definition. This refers to the fact that they still have functional vision which is the use of vision for a particular purpose. For India or other developing countries, it is essential to maintain the legal definition of blindness at the level of visual acuity of 6/60(20/200 Snellen) or less and field of vision of *20* degree or less. Already the travel concessions scholarship and other benefits are very meagre, if 'perception of light' to 'no perception of light' is considered blindness, a large number of persons who are at present availing these

concessions would fall outside the eligibility criteria and thus remain bereft of these benefits. Alternatively, if these concessions are extended to all the persons with low vision in the acuity range of 6/18 to 'perception of light' as defined by WHO the appropriate Government may not be able to meet demand due to financial constraints. For India and other developing countries it is desirable to maintain the definition of blindness as adopted in the Persons with Disability Act 1995 i.e. visual acuity of 6/60(20/200) or less and field of vision of 20 degree and less and to consider all the persons in the range of acuity of 6/18 to 6/60(20/60 to 20/200) as persons with low vision.

According to above discussion visually impaired are classified as follows-

Partially Sighted

The generally accepted definition for educational purposes now includes:

1. Those students with visual acuity of 20/70 or less in the better eye after the best possible correction, who can use vision as the main channel of learning.
2. Those students, who in the opinion of eye specialist and educational authorities will benefit by the use of special facilities provided by the programme for partially sighted students.

One eyed

The definition of blindness adopted in India excludes people with impairment only in one eye from the purview of blindness. Generally the impairment of 40% or more is considered a handicap but in the case of one eyed person it is only 30% according to the approved definition in medical parlance, a person with one good eye is not a blind person.

Vision loss

It refers to individuals who have trouble seeing, even when wearing glasses or contact lenses, as well as to individuals who are blind or unable to see at all.

Monocular vision impairment

"Monocular vision impairment" or "Monocular Blindness"; are used both eyes separately. By using the eyes in this way, as opposed by binocular vision, the field of view is increased, while depth perception is limited. The fellow eye in these need not necessarily to be "normal".

Self-reported vision loss
It is determined on an individual basis based on that person's perceived visual ability and its effect on daily functioning.

Functional limitation
It refers to the interaction of visual functioning and ability to perform activities of daily living/instrumental activities of daily living. Common daily activities affected by vision loss are reading, safe pedestrian travel, self-care, cooking, and recreational activities.

Visual impairment
It is often defined clinically as a visual acuity of 20/70 or worse in the better eye with best correction, or a total field loss of 140 degrees. Additional factors influencing visual impairment might be contrast sensitivity, light sensitivity, glare sensitivity, and light/dark adaptation.

Legal blindness
It is a level of vision loss that has been legally defined to determine eligibility for benefits. The clinical diagnosis refers to a central visual acuity of 20/200 or less in the better eye with the best possible correction, and/or a visual field of 20 degrees or less. Often, people who are diagnosed with legal blindness still have some useable vision.

Total blindness
It refers to an inability to see anything with either eye.

Unit : 1.3 □ Demographic Information-NSSO and Census 2011

Structure:

1.3.1 Introduction:

It is a constitutional obligation of the government to promote the welfare of people by securing and protecting as possible a social order in which social, economic and political justice shall inform all the institution of national life. For this reason census is necessary. There are several estimates about the size of the disabled population in India with reference to the world situation. 90% of the world's blind people live in developing countries. Visually impaired people account for 48.5% of more than 2 core figure in India. To give them proper prevalence demographic information has great importance.

1.3.2 Objectives:

After studying this unit, you should be able to:

1. Explain the need of census
2. Discuss the role ofcensus 2011
3. Explain the services provided by NSSO
4. Write about demography

1.3.3 Demographic Information

Demography is the statistical study of human population. As a very general science, it can analyze any kind of dynamic living population, i.e., one that changes over time or

space. It encompasses the study of the size, structure, and distribution of these populations, and spatial and/or temporal changes in them in response to time, birth, migration, ageing, and death. The word demography taken form Greek word where *demos,* means "the people" and *-graphy* means description or measurement. Demographics are quantifiable characteristics of a given population. Demographic analysis can cover whole societies, or groups defined by criteria such as education, nationality, religion and ethnicity. Educational institutions usually treat demography as a field of sociology, though there are a number of independent demography departments. Formal demography limits its objecf of study to the measurement of population processes, while the broader field of social demography or population studies also analyzes the relationships between economic, social, cultural and biological processes influencing a population. Demographic thoughts can be traced back to antiquity, and are present in many civilisations and cultures, like Ancient Greece, Ancient Rome, India and China. There are two types of data collection — direct and indirect — with several different methods of each type.

Direct methods

Direct data comes from vital statistics registries that track all births and deaths as well as certain changes in legal status such as marriage, divorce, and migration (registration of place of residence). In developed countries with good registration systems (such as the United States and much of Europe), registry statistics are the best method for estimating the number of births and deaths. A census is the other common direct method of collecting demographic data. A census is usually conducted by a national government and attempts to enumerate every person in a country. However, in contrast to vital statistics data, which are typically collected continuously and summarized on an annual basis, censuses typically, occur only every 10 years or so and thus are not usually the best source of data on births and deaths. Analyses are conducted after a census to estimate how much over or undercounting took place. These compare the sex ratios from the census data to those estimated from natural values and mortality data. Censuses do more than just count people. They typically collect information about families or households in addition to individual characteristics such as age, sex, marital status, literacy/education, employment status, and occupation, and geographical location. They may also collect data on migration language, religion, nationality and citizenship. In countries in which the vital registration system may be incomplete, the censuses are also used as a direct source of information about fertility and mortality.

Indirect methods

Indirect methods of collecting data are required in countries and periods where full data are not available, such as is the case in much of the developing world, and most of

historical demography. One of these techniques in contemporary demography is the sister method, where survey researchers ask women how many of their sisters have died or had children and at what age. With these surveys, researchers can then indirectly estimate birth or death rates for the entire population. Other indirect methods in contemporary demography include asking people about siblings, parents, and children. Other indirect methods are necessary in historical demography. There are a variety of demographic methods for modelling population processes. They include models of mortality, fertility, marriage disability, population projections and population momentum.

1.3.4 NSSO

The NSSO (National Sample Survey Organisation), now known as National Sample Survey Office, is an organization under the Ministry of Statistics of the Government of India. It is the largest organisation in India conducting regular socio-economic surveys. It was established in 1950. Employees of NSSO belong to Indian Statistical service and Subordinate statistical service. NSSO has four divisions: 1. Survey Design and Research Division (SDRD), 2. Field Operations Division (FOD), 3. Data Processing Division (DPD) and 4. Co-ordination and Publication Division (CPD)

The Survey Design and Research Division (SDRD)

It is a professional organ of NSSO, mandated to do the job of: Planning of the survey, Formulation of sample design, Drawing up of schedules of inquiry, Formulation of concepts and definitions, Preparation of instruction manual for survey field work, Survey Design and Research Division (SDRD). Training of field and data processing personnel on survey Methodology Formulation of scrutiny check points Drawing up of tabulation programme Preparation of survey reports Analysis and presentation of survey results and Undertaking studies for the improvement of survey methodology SDRD, NSSO is located at Mahalanobis Bhavan, Kolkata and is headed by an Additional Director General - a Higher Administrative Grade (HAG) level officer, and has sanctioned strength of three SAG (Senior Administrative Grade), fifteen JAG (Junior Administrative Grade), eight STS (Senior Time Scale) and four JTS (Junior Time Scale) level officers of Indian Statistical Service besides one Deputy Director (Administration) and the supporting staff members.

The Field Operations Division (FOD)

The one of the four Divisions of the National Sample Survey Office, is responsible for

conducting surveys in the field of Socio- Economic, Industrial Statistics, Agricultural Statistics, Prices, etc. as per the approved programmes. It is also responsible for updating the frame for conducting Socio-Economic Surveys in urban areas. This Division with its Headquarters located at New Delhi and Faridabad functions through a network of 6 Zonal Offices, 49 Regional Offices and 116 Sub-Regional Offices spread throughout the country and have staff strength of about 4000. The Division is headed by Additional Director General (ADG), an Additional Secretary Level Officer. In Headquarters, four Deputy Director Generals as well as other officers in the rank of Director/ Joint Director/ Deputy Director/ Assistant Director assist him. All the Zonal Offices are headed by Deputy Director Generals while the head of Regional Offices are Deputy Director General/ Director level officers except for Port Blair which is headed by Assistant Director. Field Operations Division (FOD).

The Data Processing Division (DPD)

This department of NSSO with Headquarters at Kolkata and five Data Processing Centres outside Kolkata at Ahmadabad, Bangalore, Delhi, Giridih and Nagpur are primarily mandated to undertake the processing, the tabulation and the dissemination of data collected through Nation Wide Large Scale Sample Surveys on various Socio-economic issues conducted by National Sample Survey Office (NSSO) under the Government of India. This task of transforming large volume of raw data into the final form of Key Indicators or Estimates in Tabular Format with due process of scrutiny and validation is carried out by a large number of trained and experienced technical officials in Electronic Data Processing Cadre under the overall supervision and guidance of the officers of Indian Statistical Service. The role of DPD starts from the initial stage of formulation of the Sample Design for NSS Surveys by SDRD wherein apart from providing input for the formulation it has to undertake the job of sample selection. Later on DPD undertakes the job of software development for Data Entry, Data Verification, Computer Edit, Other Data Validations, Howler Checks, Tabulation, etc. DPD also assists the States by providing complete IT solutions in all their data processing related activities and also through periodic training/workshop and other interactive methods. With the advent of Information Technology, DPD is now introducing modern technology to reduce time and effort in data capturing and transmission besides improving quality of unit level data. It also helps other countries/organizations in enhancing their capacity building particularly in data processing/analysis by conducting various need based training programmes. Main Functions are as follows

1. Selection of samples and preparation of Sample lists. Data Processing Division (DPD)

2. Manual checking of identification particulars and pre data entry scrutiny.
3. In-house development of validation and tabulation software.
4. Data Entry & Verification of filled-in schedules.
5. Validation of data through various stages covering both content check and coverage check.
6. Preparation of Directory and Multiplier files for estimation of parameters.
7. Tabulation of validated data as per approved tabulation plan.
8. Processing & tabulation of monthly Rural retail price data and release of Quarterly Rural Price Bulletin.
9. Assistance to state statistical agencies in processing of NSS state sample data.
10. Providing training in application of computer and on data processing.
11. Undertaking special data compilation and tabulation work for: Various analytical studies, Methodological studies etc. undertaken by NSSO in support of Working Group/Steering Committee Special users/Committees/Ministries/Depts./Orgs.
12. Organising scrutiny feedback workshop for FOD.
13. Providing technical guidance/assistance to NSS Data Users.
14. Meeting Data requirements (Adhoc tabulation/drawing of Samples etc.) and User's queries.

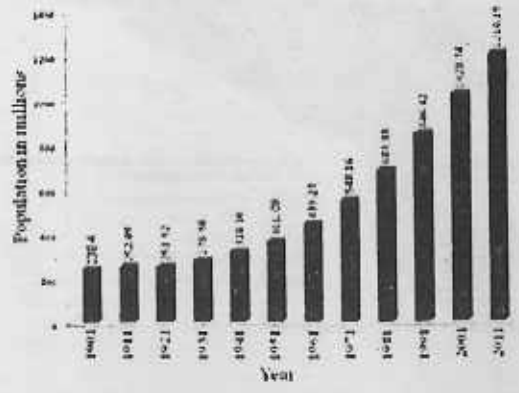
Co-ordination & Publication Division (CPD)

It is located at New Delhi and is responsible for: 1. coordinating the activities of all the Divisions of NSSO. 2. Dissemination of survey results and analysis through the biannual technical journal 'Sarvekshana' and 'National Seminars' to discuss the survey. *3.* Providing technical and secretarial assistance to Steering Committee of National Sample Surveys. 4. Supplying survey data of various rounds to individuals, researchers, research institutions and other private and govt. bodies. 5. Liaison with other Departments/ Ministries on various matters concerning NSSO. 6. Providing the technical and secretarial assistance to DG& CEO of NSSO.

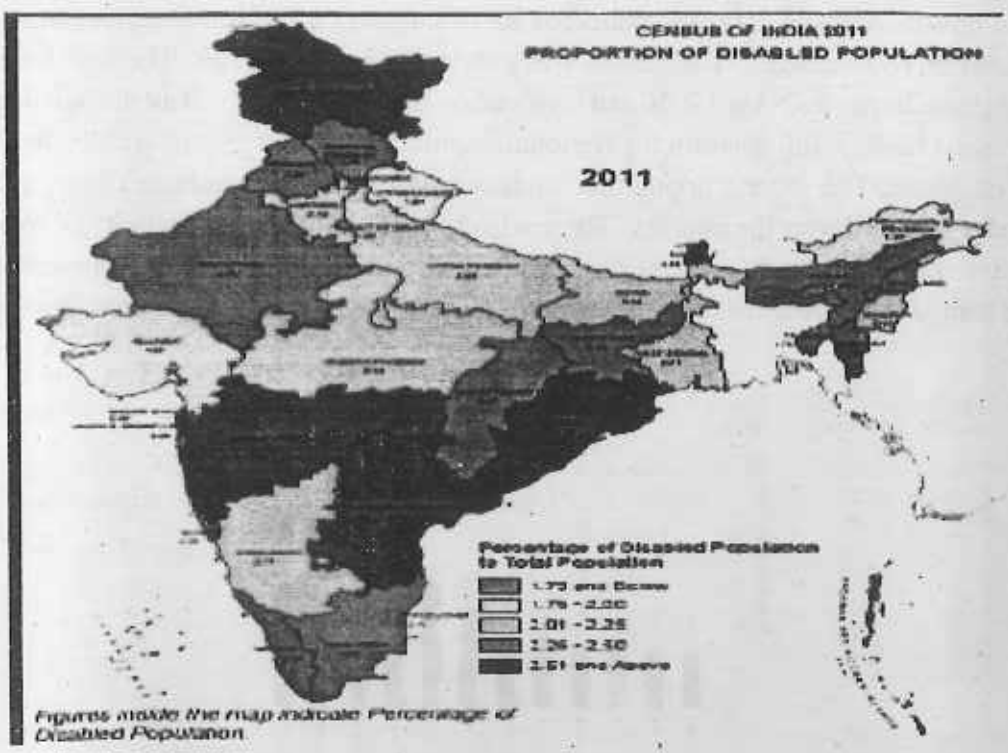
1.3.5 Census 2011

The 15th Indian Census was conducted in two phases, house listing and population enumeration. House listing phase began on 1 April 2010 and involved collection of

information about all buildings. Information for National Population Register was also collected in the first phase, which will be used to issue a 12-digit unique identification number to all registered Indians by Unique Identification Authority of India. The second population enumeration phase was conducted between 9 to 28 February 2011. Census has been conducted in India since 1872 and 2011 marks the first time biometric information was collected. According to the provisional reports released on 31 March 2011, the Indian population increased to 1.21 billion with a decadal growth of 17.64%. Adult literacy rate increased to 74.04% with a decadal growth of 9.21%. The motto of census 2011 was 'Our Census, Our future'. Spread across 29 states and 7 union territories, the census covered 640 districts, 5,767 tehsils, 7,933 towns and more than 600,000 villages. A total of 2.7 million officials visited households in 7,933 towns and 600,000 villages, classifying the population according to gender, religion, education and occupation. The cost of the exercise was approximately 2200 crore— this comes to less than 0.50 per person, well below the estimated world average of 4.60 per person. Conducted every 10 years, this census faced big challenges considering India's vast area and diversity of cultures and opposition from the manpower involved C. Chandramauli is the Registrar General and Census Commissioner of India of 2011 Indian census. Census data was collected in 16 languages and training manual was prepared in 18 languages. The census was conducted in two phases. The first house listing phase began on 1 April 2010 and involved collection of data about all the buildings and census houses. Information for National population register was also collected in the first phase. The second population enumeration phase was conducted from 9-28 February 2011 all over the country. The eradication of epidemics availability of more effective medicines for the treatment of various types of diseases and the improvement in the standard of living these are the main reason for the high growth of population in India.



Census 2001 has revealed that over million people in India as suffering from one or the other kind of disability. This is equivalent to 2.1% of the population. Among the total disabled in t he country, 12.6 million are males and 9.3 million are females. Although the number of disabled is more in rural and urban areas. The disability rate (number of disabled per 100,000 populations) for the country as whole works out to 2130. This is 2,369in the case of males and 1,874 in the case of females. Among the five types of disabilities on which data has been collected, disability in seeing at 48.5% emerges as the top category. Others in sequence are: In movement (27.9%), Mental (10.3%), in speech (7.5%), and in hearing (5.8%). The disabled by sex follow a similar pattern except for that the proportion of disabled females is higher in the category in seeing and in hearing. Across the country, the highest number of disabled has been reported from the state of Uttar Pradesh (3.6 million). Significant numbers of disabled have also been reported from the state like Bihar (1.9 million), West Bengal (1.8 million), Tamil Nadu and Maharashtra (1.6 million each). Tamil Nadu is the only state, which has a higher number of disabled females than males. Among the states, Arunachal Pradesh has the highest proportion of disabled males (66.6%) and lowest proportion of female disabled.



Number of Disabled Population and Type of Disability

	POPULATION	PERCENTAGE (%)
Total population	1,028,610,328	100.0
Total disabled population	21,906,769	2.1
Disability rate (per lakh population)	2,130	—
Type of Disability		
(a) In seeing	10,634,881	1.0
(b) In speech	1,64-0,868	0.2
(c) In hearing	1,261,722	0.1
(d) In movement	6,105,477	0.6
(e) Mental	2,263,821	0.2

Disabled Population by Sex and Residence
India, 2011

Residence	Persons	Males	Females
Total	26,810,557	14,986,202	11,824,355
Rural	18,631,921	10,408,168	8,223,753
Urban	8,178,636	4,578,034	3,600,602

Decadal Change in Disabled Population
by Sex and Residence, India, 2001-11

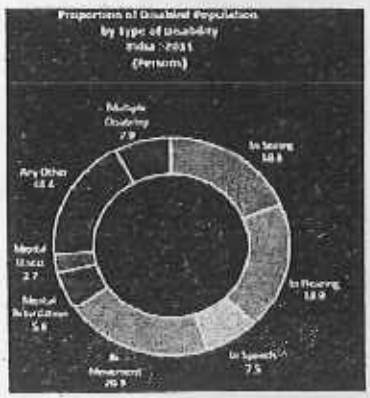
Residence	Absolute Increase			Percentage Decadal Growth		
	Persons	Males	Females	Persons	Males	Females
Total	4,903,788	2,380,567	2,523,221	22.4	18.9	27.1
Rural	2,243,539	997,983	1,245,556	13.7	10.6	17.8
Urban	2,660,249	1,382,584	1,277,665	48.2	43.3	55.0

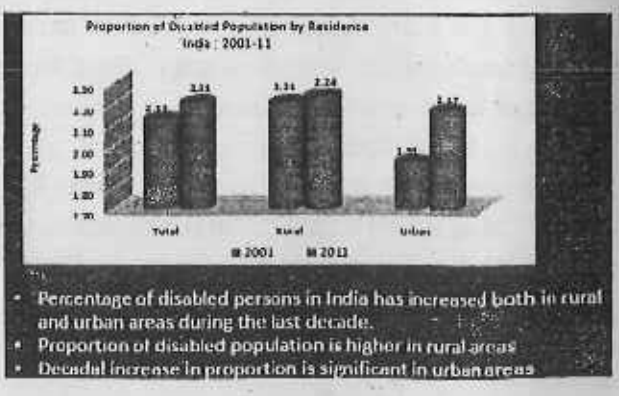
Percentage of Disabled to total population
India, 2011

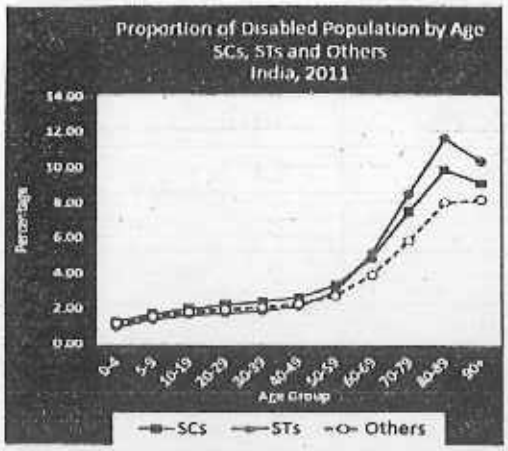
Residence	Persons	Males	Females
Totaf	2.21	2.41	2.01
Rural	2.24	2.43	2.03
Urban	2.17	2.34	1.98

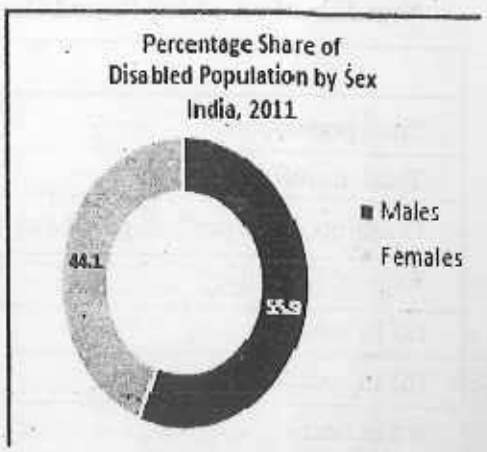
Percentage of Disabled to total population
India, 2001

Residence	Persons	Males	Females
Total	2.13	2.37	1.87
Rural	2.21	2.47	1.93
Urban	1.93	2.12	1.71









From the above discussion we come to conclusion that- the number of physically disabled persons in India was 16.15 million and they formed about 1.9 percent of the total population. 74.3 percent persons with disabilities live in rural areas. The prevalence of physical disability is reported to be 2 percent in rural areas and 1.6 percent in urban areas. Similarly, Incidence Rate is reported to be 90 per 1, 00,000 in rural areas which is higher than that of 83 in urban areas, c. Between the two sexes, prevalence as well as incidence is reported to be marginally higher among males than among females. About 12.4 percent of these persons suffered from more than one type of physical disabilities. The persons with locomotors disability are largest in number (7.6 million); followed by those with speech and/or hearing impairment (4.5 million) and then those with visual impairment (4 million).

About 9 and 7 percent households in rural and urban India respectively have at least one disabled person in the household. Among these households, about 92 percent had one disabled person, about 7 percent had 2 disabled persons and less than 1 percent reported 3 or more disabled persons, both in rural and urban sectors. About 25 percent in rural areas and 20 percent in urban areas are reported to be severely disabled as they could not function even with aids and appliances. About 70 percent of disabled persons are found to be illiterate in rural areas as against 46 percent in urban areas. Only 4 percent persons with disability in rural India have an educational level "secondary and above" as against 12 percent in urban areas. Only 29 percent and 25 percent persons with disability are employed in rural and urban India respectively. Out of these, 60 percent were self employed, 7 percent regular employees and remaining 33 percent as casual labourers.

Unit : 1.4 □ Importance of Early Identification and Intervention

Structure:

1.4.1 Introduction

'Catch them young and teach them well' is the slogan reflected all over the world for the education of children with special needs. There are a lot of advantages over identification of children with visual problems at their young ages. Most of the eye problems are medically treated and cured. After medical correction, most of the children would see normally. Some medically untreatable conditions of eye defect lead to blindness. However, a very few children would suffer from total blindness and most of the children may have residual vision. Therefore early identification of child with visual problems will help the child to go for medical and educational interventions. In this unit a detailed discussion is held on early identification, intervention and their importance.

1.4.2 Objectives

After studying this unit, you should be able to:

1. Explain the early identification of child with visual impairment

2. List out the factors and behavioural indicators for vision-loss
3. Describe the early intervention programme
4. Able to write about importance of identification and intervention

1.4.3 Early Identification:

Early eye- examination is of utmost importance. All eye surgeons have been exposed to the frustration of an adult when informed that nothing can be done to improve vision in the lazy eye. This can be prevented to a great extent if it can be detected around the age of 3-4 years. It has been observed that 24% have refractive errors and many of these errors are present at birth and go unnoticed for a long time. Early identification is the step to set the intervention programmes.

1.4.3.1 Importance of Vision and Learning about Vision Loss

Although every one of our senses plays a role in early development, vision certainly seems to lead the way. Early bondage of the child with parents is based on the child's ability to make eye contact and sustain a gaze with his parents, response to their voices by gurgling and cooing. An infant tries to move because he sees something. He learns that things and people exist in the world primarily because he sees and hears them come and go. He visually tracks an object he pitches to the ground. He can inspire his parents to play with them by making eye contact, the earliest form of conversation. He learns about size, shape, and colour, function of objects, social interactions and so much more just by looking at the world at work. Every child with or without a disability should have regular and periodic vision checking. If the child is severely disabled, this can be even more important since their other senses may not be as useful in compensating for what they miss visually. In fact this is so important that schools should have vision screening at regular intervals throughout the remainder of the child's educational career.

Factors And Behavioural Indicators For Vision Loss

A child is at risk for vision loss if the child encounters the following factors:

- Family history of vision loss
- Malformation of the eye
- Prematurity and low birth weight
- Birth trauma

- Congenital viral or bacterial
- Meningitis, Encephalitis, Hyperthyroidism, Microcephaly

The following behaviours indicate the child's vision loss

- The child does not have eyes that look typical
- The child does not recognize caregivers' faces or smile in response to their smiles
- He does not get excited when he sees other familiar object
- The child's eyes do not move together when following object
- The child may hold an object very close to his eyes
- The child may over reach or under reach for objects

1.4.3.2 Symptoms of Vision Problem

Young children with vision problems often do not know that the way they see the world is not the way everyone sees it.

1. Permanent vision loss
2. Learning difficulties

   Any changes in the appearance of eyes or vision should be investigated further. Signs to Watch Out for Early Detection (As Adopted by UNICEF)

General symptoms that may occur from birth

- Squints or blinks when looking at something
- The eyes are crossed
- Favours one eye more than the other when looking at an object
- One or both of the eyes turn in or out
- The pupils are hazy
- Eyes are tearing excessively, they are red or eye-lids are encrusted with matter
- Turns or tilts head abnormally
- Has frequent or persistent sites

May occur from 0-3 Months

- Child does not follow an object in his visual field. Child does not play with his hands.

May occur from 3-6 Months

- Child does not reach for toys in his visual field
- Child does not make eye contact when being fed
- Child does not visually inspect object

May occur from 6-9 Month

- Child's mother skills such as rolling over, sitting or crawling
- Child does not appear to discriminate between similar objects or people
- Child does not pick up small objects successfully

May occur from 9-12 Months

- Child shuts or covers one eye when focusing
- Child holds playthings very close to eyes
- Child bumps into large objects when crawling
- Child rubs his eyes excessively
- Child does not attempt to grasp spoon
- Child does not appear to notice

May occur from 1-2 Years

- Walking is delayed
- Bumps into large objects
- Child is not interested in playing
- Child not interested in picture book
- Child holds book very close to eye
- Child is afraid to walk
- Child is clumsy and awkward for his age
- Child pays more attention to sound

May occur from 2-5 Years

- Stumbles over small objects

- Not interested in task that require Sustained visual concentration
- Complains of headaches, burning, itching of eyes
- Cannot see distant things clearly
- Does not notice colour difference

May occur at School Age

- Short attention span and daydreams
- Uses unusual or fisted pencil grasp, frequently breaking pencil
- Difficulty in remembering what is read
- Loses place while reading
- Cover one eye
- Very hard to read hand writing
- Skips words and re-read
- Difficulty in sequential concepts
- Poor eye hand coordination
- Gets easily frustrated

1.4.4 Early Intervention

The term early intervention refers to services given to very young children with visual problems, generally from birth until the child turns three. For this reason these programmes are sometime called "birth to *3*" or "zero to 3". Services included medical treatment, follow-up service, visual efficiency development, training on daily living skills and mobility etc.

Deficit Model

Current practice of early intervention is viewed as a deficit model. That is strategies address deficit of vision. The time to intervene is before the delay occurs. The goal is to prevent the delay if possible. That is why the identification of a vision problem as early as possible is essential. As soon as visual problem is identified the sooner intervention can be provided, the more likely it is that delays can be prevented.

Classification Of Intervention Programmes

Early intervention programmes are classified as vision screening, medical intervention and educational intervention. All these programmes go simultaneously for prevention of eye deficit, restoration of visionc development of vision effciency.

Vision screening

All children should be screened for possible vision problems, especially those under age of three with a suspected or identified risk factor, regardless of severity.

The initial screening should be conducted by trained personnel on vision screening procedures. The trained personnel may be low vision specialist, special teacher, rehabilitation workers and village nurses. Identified cases of visual problems are referred to the medical personnel who would attend to thorough eye examination.

Medical intervention

There are many possible defects or diseases of the visual system, but fortunately many of them appear after the first few years of life. There are still many malformations, defects, diseases, infection and disorders that can affect the visual system in infants and toddlers as it is presumed that medical follow up to screening will identify and prescribe treatment. The medical professionals will take care of treatment aspects for the diseases and defects of the eyes.

Educational intervention

Educational intervention includes the preschool training such as development of daily living skills, mobility skill, visual skill etc and placement of the child into formal school system. The trained teacher or rehabilitation worker who is qualified on visual impairment takes the child with visual impairment for training on various skills required by the child. He/she also provides counselling for the parents, family members, relative and neighbours about the development of the child with visual impairment and their role on caring the child.

1.4.5 Importance

Early Identification

Early identification is extremely important because early intervention will be most effective. Sometimes it is unclear whether a child has a vision problem or not. Physical signs of vision problems include eyelids drooping over one or both eyes, or eyelids that

do not completely cover the eyes when the child closes them. If a child has a clear squint, has jerky eye movements, or has eyes that do not move together, parents should see a paediatric ophthalmologist. Other signs include: Not looking at others in the eyes, Reaching in front of or beyond an object, Holding objects very close or very far to see them, Turning or tilting his head when he uses his eyes, Continuously pushing or poking his eyes, Looking above, below or off to one side of an object, rather than directly at it Bumping into objects and having a lot or trouble seeing at night, Feeling for objects on the ground instead oflooking with her eyes. After the identification of visually impaired students under these, parents should begin working with an early childhood interventionist. Young children who are visually impaired are eligible for early intervention services, which can help a family through the child's first few years oflife. Early intervention for students with visual impairment is vital in enhancing social, physical, and intellectual development. When a child who is over three, he will qualify for special education services if the visual impairment impacts his education. Parents should contact their district's special education office to locate services for their child. A child with visual impairment may qualify for services from teachers of students with visual impairment, an orientation and mobility specialist, a physical therapist, a speech therapist, or a psychologist, depending on individual needs. Children with visual impairment should also be provided with modifications and accommodations in an inclusive classroom.

Early Intervention

Research has shown that the time between birth and age of months is a critical developmental period in a child's life. These months offer a window of opportunity that will not be available later. Early intervention programes minimize and in some cases prevent delays in development of infants and toddlers with disabilities. High quality early intervention programes for vulnerable infants and toddlers can reduce the incidence of future problems in their learning, behaviour and health status. They can decrease the need for special education and related services when a child enters school, and increase independence. There is an urgent and substantial need to identify as early as possible those infants and toddlers in need of services to ensure that intervention is provided when the developing brain is most capable of change. Children whose special needs are identified and addressed during these crucial early years have a greater chance of reaching their full potential. Intervention is likely to be more effective and less costly when it is provided earlier in life rather than later.

Unit : 1.5 □ Functional Assessment Procedures

Structure:

1.5.1 Introduction

One of the key factors in achieving safety, permanency and well being is the creation of an effective assessment process. The assessment of needs is, in fact, so critical to the child and family's well being and dynamic in its focus that no single form, tool or single event can adequately support it. Needs assessment is a process that continues throughout the life of each case. Assessment tools are merely instruments that are useful in bringing attention to issues that need particular focus and in identifying current strengths, needs and functioning for purposes of decision-making.

1.5.2 Objectives

After going through this unit, you shoul be able to

1. understand and explain functional assessment
2. State the importance of of asessment
3. List out the activities of functional vision assessment
4. Understand about helpers for doing assessment

1.5.3 What Is Functional Assessment?

A set of procedures to identify the causes of a maladaptive or socially inappropriate behaviour and reduce it through teaching replacement behaviours instead of suppressing it through punishment. The body of empirical and scientific literature which supports these methods is found in the field of applied behaviour analysis. Within functional assessment methodology the causes are sought in the immediate environment and the learning history of the individual. Causes of the maladaptive behaviour based upon intrapsychic variables or psychodynamic processes are given little attention. The outcome of the assessment is an analysis of the way the person learned the maladaptive and how it is presently supported or maintained in the present learning environment. Functional assessment does not emphasize a search for a diagnosis or classification of symptoms according to psychodynamic processes. Instead, the purpose of the assessment is to classify the maladaptive behaviour by its function (cause) and then select treatments or interventions which are effective in reducing behaviour in that functional category. Consequently, treatments or interventions are classified by functional categories and not by form of the maladaptive behaviour. In the field of education many practitioners choose interventions or treatments based upon topography or form of the behaviour instead of the function. As a result some recommended interventions actually strengthen the maladaptive behaviour instead of reducing it. This situation can make school and their personnel vulnerable to successful legal, administrative and ethical challenges.

1.5.4 Functional Assessment Methods

There are three specific functional assessment methods: (a) Direct Observation, (b) Informant Methods and (c) Functional Analysis. The terms "functional assessment" and "functional analysis" are sometimes thought to be the same thing but they are not; a functional analysis is one specific type of functional assessment.

1. Direct Observation

For direct observational methods, an observer would watch the client engage in activities within their natural environment. When the challenging behaviour occurs, the observer would record what happened just before it, what happened just after it and also take notes on what they perceive to be the potential cause of the behaviour. This method is used to develop a hypothesis about the function of the behaviour. The terms used for this method include: Direct Observation. Descriptive Functional Behaviour Assessment.

2. Informant Methods

The informant method involves interviews and questionnaires that can be completed by the client, their parents, staff members, teachers etc. These interviews would be used to identify what is happening before the behaviour occurs and then what happens after the behaviour. Just like direct observation, this method is also used to develop a hypothesis for the function of the behaviour. The terms used for this method include: Indirect Methods, Indirect Functional Behaviour Assessment, Informant Methods

3. Functional Analysis

This method, functional analysis involves practitioners deliberately changing what happens before and/or after the behaviour in an effort to test what mIght be causing the behaviour. Unlike the other two methods that are used to create a hypothesis, this method is used to actually test the hypothesis and is the only method that can truly predict when the behaviour will occur.

1.5.5 Functional Assessment Procedures For Visually Impaired Child

Like other disabilities in case of visual impairment, functional assessment is necessary to improve their remaining functional vision. Functional vision is the ability to use vision to perform desired tasks. Because of impairment in the eye and other parts of the system, low- vision children will not learn visually without intervention and help. Selection of instructional programmes and techniques requires a thorough assessment and understanding of child's capabilities.

The process of functional assessment should be done-

1) At the age of three months of a baby if the child is not attracted by the light or not move his/ her neck to see the colourful objects, the parents should report that the child may be visually impaired.
2) The child has not attracted the colourful toys.
3) If the child complairs about headache, body ache etc
4) The child may complain, to the parent, pain in eye at early stage.
5) At the time of playing the visually impaired child may not hold the ball as easily as the normal child.

6) The normal functions of day to day activities are much more affected — reading, writing, walking etc.

7) It is always seen searching objects at any time in his/her working expenence.

Who conducts a functional vision assessment?

A functional assessment is typically conducted by a teacher certified in the area of visual impairment. The specialist is a certified teacher of the visually impaired, trained to evaluate how a child utilizes vision. The vision specialist will measure and observe the visual methods a child uses throughout a routine day and will speak with parents, teachers and other caregivers who know the child well. Information about how the child uses vision, the conditions and purpose of use, is essential and will be utilized in the functional vision assessment report. The vision specialist will review records and may talk to the eye doctor to learn more about the child's visual condition.

1.5.6 Importance

1. It helps to determine the current visual functioning level of the person.
2. It helps to determine the extent of visual stimulation and instruction needed to help the person make optimum use of remaining vision.
3. It enables the person to use his limited vision in the highest potential
4. It helps to plan the person's mobility training programme
5. It helps in decisions regarding the use of visual stimulation materials
6. It helps to decide upon the nature of the primary reading medium
7. It enables one to decide on the type of devices needed by the person

1.5.7 Activities

Vision is functional if a child is able to utilize visual information to plan and carry out a task. A functional vision assessment measures how well a child uses vision to perform routine tasks in different places and different material throughout a day. Functional vision assessment has two types of activities like-I. Optical functioning and 2. Perceptual functioning. Optical functioning may consist of seven activities like- visual awareness, visual attention, visual fixation, visual focus, visual fusion, visual tracking and visual scanning. On the other hand perceptual functioning consists of eight activities like-

visual discrimination, figure ground, visual memory, visual closure, spatial relation, mobility, visual motor coordination and form constancy.

VISUAL SKILLS

OPTICAL FUNCTIONING :

Visual Awareness:
To find out the ability of the child to identify an object

Visual Attention:
To find out the ability of the child to attend to the objects.

Visual Scanning:
The ability to search for a particular object among other objects

Visual fixation:
The ability of the child to fix the eyes on the object.

Visual focus:
The ability of the child to see a known object at various distances.

Visual fusion:
The ability of the child to see the object as one.

Visual Tracking:
The ability to follow moving objects.

PERCEPTUAL FUNCTIONING:

Visual Discrimination:
The ability of a person to distinguish different objects on the basis of their colour shape or size

Visual Figure-Ground Discrimination:
The ability to isolate a particular stimulus from the background, i.e. seeing the distinctive features of an object

Visual Memory:
Ability to store and recall past experiences and integrate them into new ones.

Visual Closure:
Ability to perceive a total picture or object when onlypart of it is visible/available

Form Constancy:
Ability to perceive the same objects at different angles

Visual motor coordination:
This refers to the child's ability to perform a task using eyes and hand /foot in harmony. It consists of two types these are follows-

Eye-Hand Coordination:
Ability to use hands and eyes in harmony.

Eye-Foot Coordination:
Ability to perform a task using both eyes and foot in co-ordination.

Visual spatial relation:
This refers to the child's ability to identify spatial concepts like direction, distance etc.

Visual mobility:
This refers to the child's ability to indentify right and left concepts through movement.

1.5.8 Let us Sum Up

The process of seeing mainly organized through the parts of eye and image sharpness depends on the functions of the parts of the eye. But sometimes this process is aelayed or faces problems due to some errors which come under eye disorder. These refractive errors are curable if they are identified early and also get the treatment properly these. All these happen if people are aware.

Problem in eye does not come under blindness; blind are those who face problems for sight disturbance. According to PWD act and WHO's definition visual impairment has many classification. And these divisions depend on visual acuity, field vision, visual effiency, functional vision etc.

The NSSO conducted the 15th round of a nation-wide comprehensive survey of disabled persons during 1st April 2010 to 28th February 2011. The survey arrived at an estimate of 21 million persons having at least one or the other disability, which consti-

tuted 1.9 percent of the total population of 50 million. The survey revealed that population of the visually impaired in India at 850 million level of population. Among them minimum of them come under prevalence facilities.

Without early detection and treatment children's vision problems can lead to permanent vision loss and learning difficulties. So it is very much essential to prevent vision loss and preserve eyesight. Early intervention programme helps them for guiding properly and also helps them in their future establishment.

The development of visual ability is not innate or automatic. It requires stimulation and motivation to use vision in a variety of environments. A visually impaired child owing to uncertain and frustratingly limited vision may not always be motivated to use his vision to control and manipulate his environment to achieve specific goals. As a result he losles the ability to use whatever vision he has efficiently and purposefully. But modern researchers have proved that systematic techniques can facilitate the emergence of visually guided behaviour in some children and maximize the use of vision in others. On the other hand functional assessment procedures also measures how well a child uses vision to perform routine tasks in different places and with different materials throughout the day.

1.5.9 Unit exercise:

1. Draw a diagram of eye and label
2. Write, about refractive errors
3. How do we see?
4. Who are blind?
5. Write the pauses of low vision.
6. Classify the visual impairment.
7. Write short note on:

   (a) Visual acuity (b) visual efficiency (c) field vision
8. What is NSSO?
9. How does it function?
10. Write the salient features of the census do published in 2011
11. Explain the inportance of census

12. Prepare a list of symptoms of visual problems.
13. What is meant by early intervention?
14. Who should conduct the vision screening to whom and when?
15. What is functional assessment?
16. List out the activities offunctional assessment procedures.
17. How functional assessment help/problem child?

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Unit - 2 : Educational Implications of Visual Impairment

Unit-2.1 □ Effects of Blindness-Primary and Secondary

Structure

2.1.1 Introduction :

'Blindness' has varied interpretations. It relates to impaired sense of vision.It means that the person suffers from the loss in the sense of seeing, the organ responsible for vision is defective.

Blindness in all countries and through ages has come to develop as a connotative term. It evokes different emotional reactions in different persons. The societies across

the globe have developed their own images of blind persons, of their capabilities and of their limitations. Even beyond that, they have developed their own ways of coping with the capabilities and/or limitations of the Blind.

Parents are the part of the community and they share social ways and attittueds. But when a blind child is born to them, they find their personal ways to cope with.

As the attitudes and reactions of the community in general, and parents in particular, impinge upon the child, blindness does not remain a simple sensory loss to him; it is confounded with pshychological overtones resulting in changes in self concept of the child.

The present sub-unit outlines below the above mentioned points and a note upon the role of the teacher face to face the blind child, his parents and his community.

2.1.2. Objectives :

After studying this sub-unit you will be able to

(i) Understand andc interpret effects of Blindness/visual impairment on the child.

(ii) Discuss the implications of child's blindness for the parents and the family.

(iii) Describe the prevailing atitudes of the community towards blindness and blind persons.

(iv) Analyse the effects of family and community attitudes on the blind child.

(v) Realise his/her own role as a teacher in relation to the blind child, parents and the community.

2.1.3 Primary/Basic Effects of Blindness :

A—Cognitive:

The effects of blindness are basically cognitive. Since blindness relates to the sensory deficit of vision and because senses are the gateways to knowledge. Vision is the most actively used sense by human being and hence knowledge grows chiefly of visual experience.

(a) Berthold Lowenfeld's Interpretation :

The resulting effects of blindness have been discussed widely, but the most accepted interpretation has come from Berthold Lowenfeld (1975). In his own words,

"Blindness imposes three basic limitations :

1. In the range and variety of experiences.

2. In the ability to get about.

3. In the control of the environment and the self in relation to it."

All these interpretations may have great effects on cognitive development. They have sociological, psychological and educational implications on blindness. According to him, the visually disabled individual gets a reduced experience and therefore, 'loss of sight' cannot be interpreted as the 'loss of experience'. The sociological implication in that visually disabled persons do have experiences but those are limited in comparison with sighted persons. The psychological implication is that blindness does not mean 'loss of life' since blind persons are more like than unlike sighted persons in terms of basic needs. The educational implication is that the reduction of experience imposed by blindness can be overcome by appropriate training to the affected individual.

(b) Role of Senses :

These three obstacles to independence and self-fulfilment are the special education provisions demand for the blind child. A brief note at the three limitations may be helped in understanding the depth of losses.

It has been estimated that 90-95% of all knowledge and experience comes through the eyes. Vision is the major mode of acquiring information about people, places and processes. Therefore the blind child by definition is experientially deprived.

Vision provides much more continuous information than sound. Although touch may be equally continuous, its range is extremely limited. This definition may affect development of object permanence and conservation capability.

The capacity to organise a wide range of experiences through vision is much greater than through touch and sound. Further vision gives much more detailed information than any other sense modality.

Another educationally significant difference in sight and touch is that sight is a holistic sense. It provides information at one glance. Whereas touch is an analytical sense. We all know the story of gaining knowledge of an elephant by four blind persons. Information gathering range of touch is limited. Therefore, if you want a visually impaired child to build an accurate image of any object in his mind, you

should show it to him bit by bit till he has synthesized the image in his mind for unifying experience.

A totally blind child, in particular, depends to a very large entent on verbally mediated information. The mediation of words may leave gaps in experience and the filling of these gaps may require a very special effort on the part of the teacher.

Firstly, the blind child learns in pieces. He learns in a fragmentary way. He has to get time to put there bits and pieces toghether to form a concept which is not exactly like ours but which is enough like ours so that we can communicate. This is the is restriction in the 'range and veriety of experiences.'

The child with severe visulal impairment may be deprived of such experiences as the ordinary child has without effort. For example a young seeing child may look at an orange, jump to pick it up, feel it, smell it and eat it. At one go, the child has visual, anditory, tactile, gustatory and alfactory experience. But a severly visually implaired child may have great difficulty in locating an orange. The child will be able to locate it if it is within the range of his grasp, or within the rach of his arm. In this way the ordinary child easily gets a total experience, whereas a visually impaired child has a limited experience. His experience range can be enhanced only by supplementary tactile or auditory inputs given by a teacher or parents.

Secondly, blindness tends to create a very sedentary kind of existence. A blind person will just sit unless he is pulled out, motivated to get out and move out independently : He sits because of fear. He sits because of lack of skill in using information available in his environment and lack of skill in moving about within it. Certainly the ability to get about is restricted.

A severly visually impaired child has difficulty in moving about indepently in unfamiliar environment. Because sight does not give the child the total framework of the space in which he has to move. Therefore, determining the direction of movement poses special problems. This is particualarly difficult in large open spaces. Again detection of obstacles in the way may pose serious troubles. The child may run the risk of injury.

Thridly, a blind person talks loudly in a room that is too small for a loud voice or he talks "to a corner" or an empty chair rather than to another person. The common reaction is what a silly man. But it is not silly. It simply shows how a blind person is very much at a disadvantage. Not knowing where one is, being unable to contorl one's environment and oneslef in relation ot it is a significant deficit.

It is not easy for a severely visually impaired child to read facial expression. Reinforcement of positive behaviour may be denied to him if he cannot read the face of his mother to whether she is happy. Parental approval in strong positive reinforces, The child's eye contact with his mother in also not possible.

Now it is clear that vision is the dominant sense giving us information about the environment. No interaction with the environment is possible without gathering, storing, retrieving and organizing information. The loss of vision tends to restrict this process. Now we are to consider to what extent loss of vision hinders cognitive development and to what extent this deficiency is made up as the child grows in age and experience.

(c) Jean Piaget's (1896-1980) Theory of Intellectual Development will help us to know all in this respect.

Piaget says that Intellectual development takes place through the process of assimilation and accommodation.

What is Assimilation ?

Assimilation occurs when an already learnt stimulous evokes a response. For example, if a child sees a mango and recognizes it properly, this is an example of Assmilation.

What is Accommodation ?

Accommodation takes place when a child adds a new activity to his repertoir. After recognising a mango if a child begins to eat that, this is an example of Accommodation.

These two processes involve acquiring information, storing it, organizing it, retrieving it in response to an approprite stimulus and developing behavioural responses appropriate to the tank in hand. In the light of the limitations entire activity of information processing in influenced by visual disability.

Piaget divided Intellectual Development into several stages. Most important stages are :

1. **Sensory Motor Stage (0 to 2 years)**
2. **Preconceptual Stage (2-4 years)**
3. **Intuitive Stage (4-7 years)**
4. **Stage of concrete operations (7-11 years)**
5. **Stage of Logical operations (11 year or above)**

1. **Sensory Motor development :** According to Piaget's theory of cognitive development. The first two years constitute the sensory motor period during which infants' bahaviour progresses from being characterised by simple reflexes to showing an internalised and representational form of problem solving. This period is broken down in to sex stages.

(i) Reflexes (birth to one month) : The infant's behaviour is characterised primarily by reflexive responses to his own body and to some aspects of the external world. The infant discovers some objects are suckible and some are not.

(ii) Primary Circular Reactions (One to four months) : The infant begins to repeat selectively those actions that produce effects that are interesting and satisfying to him. These actions are primarily directed to his own body rather than external objects.

(iii) Secondary Circular Reaction (four to eight months) : The infant reproduces behaviour that produces effects in the external world that are satisfying or interesting to him. This stage marks the beginning of the infant's effective orientation to the external world.

(iv) Co-ordination of the Secondary Circular Reaction (eight to twelve months) : The beginnings of intentionality are seen in this 4th stage. Infant begins to co-ordinate his behaviour with respect to the external world in more complex ways. The use of his specific means to obtain speciefic ends shows his increasing organization of the world.

(v) Tertiary Circular Reactions (twelve to eighteen months) : In this stage the infant's behaviour clearly involves active trial and error experimentation on the world.

(vi) Internalization of thought (eighteen to twenty four months) : This stage marks the beginning of internalized thought.

In this sensorimotor stage intelligence is demonstrated through motor activity without use of symbols. Knowledge of the world is limited (but developing) because it is based on physical interactions/experiences. Children acquire object permanence at about 7 months of age (memory). Physical development (mobility) allows the child to begin developing new intellectual activities. Some symbolic (langugae) abilities are developed at the end of this stage.

A visually handcapped child may reach a particular stage late but connot skip it. This also confirms the view that even if there is some delay in developments, the

quality of mental ability remains uninfluenced by visual disability. There has been very little direct effects of blindness on the infant's progress throug the stages of the sensory motor period. Stephens (1972) discussed some implications of visual impairment. She noted Piaget's stress on the importance of the infant's interaction with his environment as well as the fact that in the normal infant a large measure of that interaction depends on vision.

2. Preconceptual Stage : During this stage children gradually construct more complex mental images. But these images obviously depend on the sensory data availble to the child. Unless specific efforts are made by parents, teachers and neighbours, the sensory data made available to the child is dificient. Therefore, the visually handicapped child crosses this stage later than the sighted child.

3. Intuitive Stage : At this stage a child is dominated by what is known as 'here and now' i.e. the child's thinking is dominated by immediate percepts. The sighted child reads print and may look at a number of two dimensional objects. But the blind child lives in a three dimensional worlds. Even the reading of Braille is a three dimensional operation. Again a great deal of experience coming to the blind child is verbally meidated.

4. Stage of Concrete Operation : At this stage child is expected to make use of reason and logic relating objectis to concrete objects. The limitations pointed out by Lowenfelf are applicable to blind children at this stage as well. If the range and variety of their experience is limited, their logic and reasoning cannot but be affected. Actually this is the result of limited experience and not of blindness.

5. Stage of Logical Operation : At this stage children are able to reason without the presence of concrete objects. In this stage of formal operations children can present problems mentally and operate on them. The blind children can make mental representation as effective and at about the same age as sighted children even if the precise nature of their mental representation is some what different.

(d) Some Factors Responsible for Cognitive Development :

❑ **Concept Formation :** Concepts have been styled as building blocks of thought. They are therefore, basic to cognitive development. A fundamental ability required for concept formation is classification. It involves nothing similarities and disregarding insignificant differences. The use of long or meaningless words not based on actual experience often discribed in the literature as verbalism. It is the use of words without knowing the precise meaning.

❑ **Conservation :** The conservation of a property refers in general to the ability to retain correct judgement of the property even in the tace of perceptual transformation. The general finding is that blind children show a lag in the development of conservation of volume, weight and substance. But these are temporary lag and as a blind child grows in experience he is most often able to make up his deficiency in day to day functioning.

❑ **Imagery :** Imagery plays an important role in the child's cognitive growth and later inpracticably every aspect of his life.

What do we precisely mean by Imagery ?

Most of our actions are based on the thinking process. An image comes to our mind before we eat, talk, jump, run or perform a more complex task.

What are these images ?

There are the residue of stored experience. Indeed they are learned resoponses. But there learned responses may be visual, auditory, tactile, or kinesthetic or combination of visio-motor, audio-motor or verbal-motor. In fact no physical activity will be possible without such imagery.

❑ **Creativity :** Creativity often depends on unique and efficient combination of images. It is often been asked whether blind and sighted children differ in divergent thinking. There is no fundamental difference between blind and sighted children on divergent thinking except that blind children exhibit much greater verbal fluency where as sighted children use much greater visual imagery.

B. Attitudes Affecting Blindness :

(a) Community Affitudes and Reactions : The deficits caused by blindness are not taken as objectively by the community as occur to the individual. The reaction varies from community to community depending on its traditions, culture and belief. Killing of disabled persons existed. As the society progressed towards being a welfare state from a warfare state, so did the changes occur in the total outlook. The blind persons became members of the society who needed to be looked after but not at the equal level with others. They were to live an charity. It has also an undertofore of religions beliefs. To-day the scenario is changing. The community is based on the priciples of equality and fraternity. The motto is equal opportunities for all including handicapped people.

Though psychologists and educationists do talk about individual differences, yet we as human beings try to generalise things. Chariety its general tendency is to

perceive a blind person as one who can make a livelihood only though begging, hence blindness implies low level of living. Another misconception refers to the special talents of blind people like musical talents, fantastic meamories. As normal human beings they depends on senses of hearing and touch as the sight is denied.

The stereotypes go beyond the believes ans saying of it. It is reflected in the distortion in interaction with blind people. In daily life situation they are denied the opportunites, expectations are restricted and thus we 'socialise' the impairment into disability which is further extended to become a handicapped.

The community at large affects the blind child not only because of its general attitude but also throught the ways that are refelected in the attitudes and behaviour of the immediate human contacts of the child, the neighbours, the parents and the peers.

(b) Parnetal Reaction to Blindness : When a child is born blind, the parents feel at a loss for so many social, personal and psychological reasons. The reactions occur on a continum neglect to over-protection. Due to inability of most parents to understand the implications of an imparinemt, the impariment is perceived as handicap, on one extreme is the response of neglect. Because it is felt that a blind person is devoid of all normal human functions of being an active member of the society. Not only this even parents at times feel the birth of a blind child to be the result of some sin. Hence in their own frustration, the child, is ignored and naturally the 'expectancey prophecy' comes to be true, the child develops into a person who cannot contribute socially or economically to the society.

Neglect causes certain personality problems but the child has to learn certain basic living skills. Over protection is more dangerous. It deines the child all of the natural demands or expectations of society. In between these two ends of the continuum of neglect and over protection, are the discrepant behaviours of parents which add to the problems of the blind child.

The discrepant behaviour is the gap between what a person says and what a person does/feels—The social structure is such that we try to say or act what is socially acceptable. Real feelings are rarely expressed especially when they are centrary to the socially desirable ones. The parents of a blind child, at times, pose the full acceptance of the blind child as an over behaviours, because today society expects parents to stand by their children. But covertly, it is difficult to accept a child who becomes a liability, a reason for social talk and criticism. Overt rejection is managable but covert rejection does not only deceive a child, it hurts him psychologically. It affects not only his growth and social relationships but also his own self-concept, the very basic of a person's development.

(c) Psycho-social Effects on the Child : Psycho-social development of a blind child is not affected, so much by blindness, perse, as it is disrupted by the emotional over-tones of blindness, for the parents and thr community. It is now a well-known fact from reaserch that children tend to achieve as much, and only as much as their parents aspire them to achieve or the significant persons in their environment expect them to achieve. But once the community deos not treat them as individuals, they are lost into a crowd, the crowd of blind persons—beggars, musicions or do whatever they like, once, the parents stop treating the child as a developing individual, once they refuse to accept his capabilities and limitations, both in a realistic manner, his self concept is bound to be severey affected. Overprotection takes away his independence, neglect turns him to exhibit undesirable behaviour—Either way, it is the suffering child whose miserices multiply.

2.1.4. Secondary Effect of Blindness:

After going through the effect of Blindness–primary, the students have clearly understand that there are some effects of the Visual Impairment which are due to impairment, disability and for the deficient vision. These conditions are not final. Some can be minimised with the learning of some teachiques. For example a visually impaired person is handicapped in a new place and with the new things. If he/she is oriented properly with exploration and narration barring verbalism he/she will be able to do for himself/herself. Then he/she will no more be handicapped.

The on-set of blindness makes the effects whether it will be primary or secondary. Formation of concept differes in respect of born blind (congenitally) and later age blind (adventitiously) or acquired blindness. In case of later age blind the effects become secondary.

We should keep in mind the issue of residual vision. Visual disability is considered from 40%. The visual disability ranging from 40% to 90% relates secondary effect. 90% to light perceptioon will be considered severe visual disability and they have only functional vision. Hence the percentage of visual disability refers whether the effects will be primary or secondary.

Training and practice of some teachiques like orientation & mobility, concept formation either by TLM or getting in touch of real objects as far as possible, activities of daily living skills, have management, personal management, arranging of reading materials, assistive devices will minimuse the handicapping condition.

Apart these the attidutes of parents, family, peers, community need to be changed through awarness making them reciant of the ability of the visually impaired, trying for their real acceptence. People in the media need to be educated to write about blindness accurately and carefully. The public need imformation not only on the realities of blindness but also on the techniques which make both the blind and the sighted persons comfortable. Fortunately at the Govt. level some services are also extended for making the visullay imparied at par the sighted people. Hence the primary effects gradually become secondary with the progress of science, Information & Technology.

2.1.5. Let us Sum Up

The ordinary child easily gets a total experience where as a visually impaired child has a limited experience. The child's experience range can be enhanced, compensated to a great extent only by supplementary tactile or auditory imputs given by teachers or parents. In view of the above stated implications that a teacher is supposed to play his/her role face-to-face the blind child, his parents, and his community. The specific understanding and skills required of the teacher of blind children are given below with suggested activites for their development.

1. The teacher should know the social climate from which the child comes.

Activity :

(i) Prepare a case study of the observations/perceptions of the blind child of his social acceptance.

(ii) Make interview of the parents, neighbours, peers and fellow teachers about their reactions to the blind child.

2. The tecaher should have experience, knowledge of and faith in the capabilities of blind child.

Activity :

(i) Make observations from the Daily Lives of some blind persons employed in significant jobs.

3. Reduce discrepant behaviour.

Activity :

(i) Introspect your own attitude towards blindness.

(ii) Analyse the attitude of the parents.

4. Aviod negative or inappropirate semantics.

Activity :

(i) Analyse the tasks that are given to sighted & blind children.

(ii) Analyse the expressin of speech used for interacting with blind and sighted children.

2.1.6 "Check your Progress"

1. List how the blindness affects objectively.

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2. Define stereotype behaviour.

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3. To-day, the scenario is changing—Explain.

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4. Senses are the gate-ways to knowledge—Describe.

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5. Over protection snatches way independence—Clarify.

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6. Distinguish between over behaviour and covert behaviour.

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2.1.7 Check Yourself

Some questions are here for self-check. Tick the most appropriate answer for each.

1. Three Major/basic limitations imposed by severe visual impairment was put forward by—

   (a) Jean Piaget

   (b) Berthold Lowenfeld

   (c) Valintin Hauy

   (d) Samual Gridley Howe.

2. The number of the most important stages of intellectual development as stated by Piaget is—

   (a) 8 (b) 6 (c) 3 (d) 5

3. Sighted persons feel pity for visually impaired because—

   (a) Visually impaired cannot live properly in the world of sighted

   (b) Sighted people fail to understand strength of visually impaired

   (c) By the society it is taught to the sighted

   (d) Kindness is a human value.

4. A visually imparied person can learn effectively if—

   (a) he is given variety of experience

   (b) he is taught only through auditory mode

   (c) he is given a chance to learn

   (d) he is left to learn by himself

5. Parents of visually impaired children tend to overprotect because—

(a) They love thier children

(b) They despise their children

(c) They are afraid for thier safely

(d) They try to hide their guilty feeling.

6. **Tick the most appropriate response.**

(a) Senses are the geteways to knowledge [True/False]

(b) The community affects a blind child by not only its general attitude but also the attitude and behaviour of he neighbours, parents and peers. [True/False]

(c) Teachers can generalise about blindness on the basis of their limited experience. [True/False]

(d) All blind persons have special talents like musical talent and fantastic memory. [True/False]

(e) Blind persons are like any other normal human beings. [True/False]

Answer Key :

1. (b), 2. (d), 3. (b). 4, (a), 5. (c). 6. (a) False, (b) True, (c) False, (d) False, (e) True.

Unit : 2.2. □ Selective Educational Placement

Structure

2.2.1 Introduction :

Mainstreaming of the disabled children is more than a half century old attempt in India. To-day equal opportunities to all disabled persons have become a mandate for all welfare states. In the preamble to our Indian Constitution, it has been emphatically declared that the people of India are resolved to provide equality of status and opportunity for everyone of its citizens including the disabled persons of the country.

"Education For All" (EFA) has been The Thrust of our Government and our people for many years. But due to several reasons including inadequency of financial and personnel resources, this dream has not been complitely materialised so far. An alarming percentage of our school-going-age population or still illiterate and ignorant remaining out-side the educational prograpmmes.

2.2.2. Objectives :

(i) The students will have a clear idea of educational programmes and placement of disabled children particularly the Visually Impaired.

(ii) They would be more encouraged for the education of the visually impaired children and the target EFA will be achieved.

(iii) Being aware of the educational programmes for the Visually Impaired children they could counsel V. I. Children for their education and get inspiration for conducting some Research Study.

2.2.3. Types of Educational Institutions

A : Special School

Special school concept for the disabled is the earliest one implemented in India. The attitude changes to the services for the disabled persons in India parallely as those existed internationally. As a matter of fact, the eudcational community did not realise that disabled children could be educated. But the inception of special schools for different disabilities proved them to be worng.

What is a special school ?

A Special school is a place of education for the disabled children.

What is a Residential School ?

Residential School is an institution where all students reside and learn.

Are all Special Schools Residential ?

No. Some are completely residential where all enrolled students reside in the hostels arranged by the school. Some are partly residential and partly day-scholar i.e. Some students reside in the hostels and some students come to school from outside. Again some special schools have hostels, all students are day-scholars.

Do all special schools follow a special curriculum widely su: ed to a disabled child ?

No. Some categories of disability have some special curriculum widely suited to a disabled child. But in case visiual Impariment and Hearing Impairment, the existing curriculum for the normal education is followed. For other categories of disability only the mild and moderate groups can study under normal curriculum.

What are plus curricular activities for the Visually Impaired Students ?

In order to perform well in curricular aspects, Visually disabled children should learn skills which are peculiar to blindness. These skills ae called "Plus curricular activities' The correlation between general and plus curricular activities is positive and high. We will read more about this in the curriculum sub-unit.

In most cases the special schools provide 24 hours custodial care to the children with disabilities in a protective environment.

The growth of special services for disabled children in India has followed the global trends of care and help. It suggest the availability of some form of educational and rehabilitation of persons with disabilities. In pre-independent India, foreign missionaries introduced services for the disabled in the country. Besides direct service to these persons, the missionaries also assisted the Indian counter parts in attaining skills by undergoing teachinical courses abroad. The 1st school for the deaf in Mumbai and the first school for the Blind in Amritsar were started by The Missionaries in 1883 and 1887 respectively.

At the time of independence in India, there was no formal legislation to ensure compulsory education for the disabled. Though the articles 45 of the coustitution of India is assuring better services to persons with disabilities in India, it was no enforced through legislation until recently. As on today more Than 3000 special schools for the disabled are functioning in India of which approxmately 900 are institutions for the hearing impaired, 400 for the children with visual impairment, 1000 for mentally retarted and the remaining 700 for children with other physical disabilities.

A 'blind school' as it is commonly called is a special school, because it caters to the needs of a special kind of students–the visually handicapped. Visual impairment creates special problems and difficulties in the psychomotor, cognitive and affective areas, and in interpersonal relations of the individual–which require special kind of approach and solution. A blind school is supposed to do all these. It is different from a general school in the sense that it imparts not only, 'academic'

education but also aims at the development of compensatory skills i.e. rehabilitation among its students.

The speciality of a blind school lies in the fact that almost always it is a residential school, though an insignificant number may attend it as day scholars here and there. This characteristic depends on both historical and demographic necessities. Historcally, the modern blind schools have evolved from the pre-1784 asylums before the establishment of valentine Hany's school in Pasis. From that time till the present day, no other way of schooling seems feasible than separating blind children from the seeing in special residential schools. Special features of these schools can be noticed in the words of Lowenfeld, "In Germany, for instence, blind children entered the residential school and upon graduation were transferred from one building to another where handicrafts kept them productively occupied until they became too old to work and were moved to still another building, on the same groundo, for he aged blind–a kind of 'cradle to grave security'.....In many parts of the world, it has not yet moved for beyond this stage.

Demographically, the geo-scatter of the blind population makes it imperative that they should be collected in one place so that they can be given education and training properly. The institutionalization of visually handicapped children in residential special schools illustrates in concrete terms the quality of attitudes to handicapped––the desire to create aome positive means of assistance and the willingness to separate and confine.

In these schools, the manners of instruction is also different—either there are special teaching methods, or the theacher-pupil ratio is very low, the close connections between the medical and pare-medical staff is also a distinctive feature of special school.

Special schools have several aims for their pupils which are quite different from the regular schools. These Shools include making the visually handicapped child as normal in bahaviour as possible. This means, imparting training in for example, orientation and mobility, training, sensory training, use of residual vision, daily living skills development etc. The aim is to enable the child to blend into his/her social context as for as possible. A general aim is the vital notion of independence––the maximum economic, social and personal self-sufficiency for the child. The school also tries to help the child to live with his/her disability in a way which minimizes its handicapping effects. These are some of the aims which distinguish a special school from a normal regular school.

To enable the special school to achieve these goals all the component factors

which constitute a school must be brought together and made to work like a, well-oiled machine. This is called "School Organisation" Combining both—human and non-human elements, we get four major factors essential for good organisation and these are (i) Management, (ii) Teaching Personnel, (iii) Curriculum & (iv) Pupils.

Apart from the above-mentioned factors, there is another equally important element in the organisation of a special school which is 'community' including the parents. This fact is generally not taken into amount as it remains beyond the boundaries of the school premises, but nonetheless, its importance cannot be minimised because it is the community which is the means and the ends, of the education and training of the handicaped child.

Just to bring all the elements together is not oraganisation, a force is required to make all these factors work in union. This force in the school organisation is the Headmaster or in some cases the Principal, or in other words the Head of the Institution is the Pivot round which the whole organisation revolves.

❑ Special School as Innovator :

'To innovate' means "to introduce something new or novel in the existing system." The necessity of ushering in the new becomes imperative when the old and traditional system fails to deliver he expected result in the changing situaltious. In the New Education Policy (NEP) a basic change in the outlook and approach was proposed. By providing effective lobby for legistlation, sensitizing the decision makers in he Government, helping the regular schools in the proper management of Integrated system, diversifying their own activities, initiating research and experiment in the field, the special school can play the role of responsible guide and innovator.

❑ Special School–its relevance

Setting up a special school with all the necessary resources like infrastructure, equipments and manpower warrants a huge capital. In a developing country like India which can't afford to huge investments on alternative system became imperative so as to bring all the disabled children under the umbrella of education. Inclusive education is one of the viable approaches to make the dream come true. Inclusive education is not a threat to integrated education concept or the special school programmes rather an important componant for education of the disabled. The special schools can concentrate more on difficult groups such as severe and profound group of children and children with additional disabilites. It is noted that the introduction of one system had never suppressed the old system but has widened

the scope and action of such system. Therefore, special schools can change their role in the following ways for expanding inclusion.

1. Serving as resource centres for a cluster of general educationa schools which are involved in inclusive education.
2. Organising inservice courses to the teachers of general schools in mtheods of handling children with disabilities.
3. Sharing special equipment with general schools for enriching learinng experiences of children with disabilites.
4. Organising summer camps for non-disabled children to create awarness in them an disability related issues.
5. Providing residenteal school facilities to children with severe and profound disabilities.
6. Undertaking action research studies on disability related issues and dissminate the information to general schools.
7. Initiate community based rehabilitation services to provide alternative education and rehabilitation to persons with disabilities in their own localities.

Therfore, special schools can play a vital role for the betterment of inclusive education in India. The inclusive education and special school concepts are not competitive to each other. In fact they are complimentory to each other. This spirit would go a long way in establishing a base for the harmonius growth of services for persons with disabilities in India.

❑ Integration and Inclusion–how do they differ ?

In India the two systems–intergrated education and inclusive education have a major difference. In integrated education, specialist teachers provide most of the essential as well as support services, where as general classroom tehachers provide additional assistance to blind children in the classroom.

In inclusive settings, the education of disabled children is treated as an integral part of general education. Therefore, essential services are provided by general classroom teachers and only support servives are provided by specialist teachers.

Provision for education of children with disabilities is usually made in special

schools. But these special schools are completely indadequate to cater to the need of the vast population of children with disablities. So the steps have been taken to make provision of education of these children in general, open and non-formal schools.

B. General Schools :

More than 5,00,000 schools are there in India to look after the educational needs of the children in the country. These schools are meant for the normal children. But the constitutional provision to make education compulsory and free for children including disabled ones up-to the age of 14 years has compelled the policy makers and administration to make available the facilities of these schools for the education of the disabled children. In this context, these general schools may be grouped into Four Categories :

- Schools with normal children only.
- Schoos where disabled children are enrolled but without any special facility of trained teachers or special teaching aids.
- Schools where disabled children read along with normal children but trained teachers are there to understand their special needs and try to satisfy there needs to some extent.
- Schools where there are special sections for disabled children.

C : Open School :

All disabled children cannot be benefited from formal learning system. There are many over-aged children and dropouts who may like to continue education through distance mode. The clients in vocational and rehabilitation centers who want to continue higher education many pursue the same through distance learning system. The Indira Gandhi Natinal Open University, The Netaji Subhas Open University, some universities in every states of India, some foreign universities, Rabindra Mukta Vidyalaya etc have also started special study centres to assist persons with disabilities to continue shool education and higher education. Such distance education opportunities must be used to the maximum possible extent to make more disabled persons educated.

Open learing system is considered as the panacea of the general educational system. When developed nations as well as developing nations are acknowledgeing the need of open learning as a viable alternative to make any country literate, the

special education system, being a part of general edcucation system, needs to examine the feasibility of open learning to make more disabled persons literate. The National Open School has developed instructional material for adaptation of curriculum in the case of disabled children. It has also started providing accreditation to selected institutes in the country to offer all levels of academic and vocational courses for the benefit of disabled children. The strengths of the National Open School curriculum are its wider range of options for course selection and facility to learn at the pace of the learner. These two aspects suit the requirement of children with disabilities. The children, according th their abilities, may select either academic or vocational courses.

D : Non-Formal Schools :

While open learning system may be encouraged for school-going and academically capable children, many adult disabled persons may not be benefited from this approach. There is a need to promote non-formal education programmes in the existing community based rehabilitation programmes to provide educational services to there clients. These clients may not opt for higher education, but they may become lifesafe for better living. Adult disabled persons are the potential seekers of non-formal education.

2.2.4 Models of Educational Programmes For Children with Disabilities

A. Resource Model :

This is an educational plan in which a child with any type of disability specifically visually Impaired is enrolled in a regular class. Within the school building a special teacher called resource teacher is available to the child along with his regular teacher. The regular teacher assumes major responsibility for the children with all disability in general programme. The resource teacher is responsible for instruction in special techniques or skills required for children of all types of disabilities. One full time resource teacher can manage 8–10 children of different types of disability in the resource programme. As for as possible, the children should be distributed in different classes/sections, preferably not more than 2 in one class/section.

In developing countries, at least seven models of Resource System are in practice. These are the following—

(a) Resource model where visually impaired children study in genrral schools and stay in hostels for non-disabled children.

(b) Resource model where visually impaird children study in general schools and stay in hostels of the near by special schools.

(c) Resource model wher visually impaired children study in general schools and stay in hostels exclusively arranged for them.

(d) Resource model where visually impaird children study is general schools and stay with parents at home.

(e) Semi-resource model or co-operative model where visually impaired children are taught only by the resource teacher in a separte class in a general school.

(f) Multi-category resource model where disabled children of different types are educated in a general school by the regular teachers and a specialist teachers.

(g) Multi-category itinerant model where one special teacher attends to the need of visually impaired children of different categouries in a particular locality.

B. Itinerant Teacher Model :

This is an educational plan in which the children with all disabilities are enrolled in a regular class in his/her home school where his needs are met through the combined efforts of the regular teachers and visiting intinerant teacher qualified to offer special service. The salient features of the Itinerant model.

- The children in this programme are distributed in different schools.
- The Itinerant teacher has to travel everyday to reach the children.
- Each child will be visited by the teacher twice or thrice a week. However children with all disability of primary classes should be given frequent visits. In this case, limited number of children with all disability should be enrolled at the primary level especially in the beginning stages of the Itinerant programme.
- Each school will not be houring a resource room. So for the itinerant teacher, a resource kit is must.
- The schools selected for the programme can be within a radius of 8 kms. However, this distance depends upon the topography of the locality.
- Depending upon the topography, the itinerant teacher should be provided with transportation arrangements—a bicycle or a motor cycle can be given.

C. Dual Teaching Model :

This is the model which can make the universalisation principle, a reality. Even

though resource and itinerant programme can reach a huge number of children with all types of disability, there are numerous places where educational services for this population are not existing. For example, an isolated village which has one or two children with multi-category disability can very well go for the dual teaching plan. This plan is successful only when the number of disabled childern is very limited, not more than two for ideal programme. The regular teachers with the support instructional material and limited competency oriented training can look after children with multi-catagory disability in addition to their regular classroom respossibilities. A token incentive may by provided for their additional work with disabled children. A large number of teachers, at least one teacher per school have to be trainied through crash programmes of two to three months duration to serve in the dual teaching plan. When such arrangements are made, any visually impaired child also can avail the educational facility in the local school itself.

D. Distance Learning Model :

The present day scenario is changed. The out-reach programme services of education is at every doorstep now. Expensive college and university centralised higher education is brought very close to our home through the study centres. Institutions like Indira Gandhi National Open University, Netaji Subhas Open University, all other universities of our own state and other states even the foreign universities facilitate higher education available in the home locality. Apart these to-day Information & Technology has brought the world and all resources of education to our room-corner. Like general students all category of disabled students including Visually Impaired can avail themselves of the opportunities of higher education seating at home keeping personal business and engagement undisturbed and intact.

E. Alternative school model :

The possibility of alternative schooling such as night schools, evening schools, pacakge programme etc. may also be explored and take into account for providing are neceeded to improve the skills of the disabled individual to become economically as well as educatinonally rehabilited. India has great potential for the growth of alternative education models to promote maximum services to all disabled persons.

F. Home based education model :

"This programme is meant for children who are physically handicapped also to the extent that they cannot attend a school, or who live where a school seuitable

for them is not available." The purpose of this school is that the physical ineapaiety should not and need not create a "mental vegetable". If the children are unable to attend the school education can be brought to them.

In this approach specialised teachers are nominated routinely to minimise interruptions in a student's education caused by short and long time confinment at home. The special teachers in this system are assigned with a caseload and visit the student in the home on a regular basis. The major responsibility of there teachers is to assist the child's regular classroom teacher in preparing instructional plans and guidelines which can be pursued with the homebound student on one-to-one tutorial basis. It is desirable that the learning environment should be made more compatible to the child's basic physical and emotional needs in theis system. The homebound programmes are rarely practised in Indian conditions.

2.2.5. The need of Inclusive Education for the Disabled in India

In India special school services are more than a century old. At present, approximately 30,000 blind children are served in nearly 400 special schools for the blind. The present scenario is that :

(i) A disabled child has to travel to far off places, whereas a non-disabled sibling from the same family can attend the local school. This accessibility of local school is not made available to children with visual impairment.

(ii) In most villages of the country, children with disabilities of different conditions are present. As far as the standard models are concerned, one specialist teacher serves 8–10 disabled children of the same category. But the scattered villages in the country do not have an adequate number of the same category to justify the appointment of a full-time resource teacher. Therefore, the need of multicategory personal becomes inevitable.

(iii) The extent of disability in each category ranges from mild cases to severe and profound cases. The mild and moderate cases are more in number than the severe and profound cases. Due to a lack of sensitivity of general education to the needs of children with viusual impariment, even the mild and moderae cases are not attending schools. This invites the involvement of general education so that children who are currently left out can be served.

(iv) Last but not the least, the enrolment in the integrated education as per the sixth All India Survey on Education (1998) in 8633. The total coverage in both

special schools and integrated settings constitutes less than 57 of the population of blind children. Therefore, special schools and integrated education models are not able to provides access to all. The Education for All (EFA) campaign should not become 'education for all minus blind children'. If EFA in the case of blind children is to become a reality, inclusive education needs to be nurtured and implemented. In additin to the accessibility factor, the natue of distribution of visually impaired children too demands inclusive education. At present the SarvaShiksha Abhiyan/ Mission is the active force for full implenmentation of Inclusive programme.

2.2.6. Let us Sum Up :

❑ Education of disabled children in India is served by mainly four types of schools—special, general, open and non-formal.

❑ There are various models of Education available for disabled children such as–
–Resource Room Model, Itinerant Teacher model, Distance Learning Model, Alternative School Model, Home Based Education Model.

2.2.7. "Check Your Progress" :

1. (i) The teacher should know the educational placement of disbaled children.

Activity :

Enquire disabled children's learning in your locality

(ii) Type of study materials of a visually impaired child.

Activity :

Locate a visually impaired child. List his/her study materials and techniques of learning.

2. Point for discussion.

After going through the sub-unit you may like further discussion on some points and classification on other

Note down those points.

3. (i) Inclusive and Integrated setting of educatin is not a Threat to Special Residential System—Justify.

(ii) Inclusive and integrated educational setting for the disabled children—Differentiae.

4. Assignments :

Prepare a Report regarding the types of schools and models of education available in Your Block. Collecting data from various sources and give your suggestions and recommendations for promotion of education of the children with disability.

5. Self–Check :

Tick the most apporpriete answer :

(i) The tirest school for the visually impaired in India was established India– (a) 1784, (b) 1883, (c) 1987, (d) 1887.

(ii) Constitution of India assrures better services to persons with disabilities under article No.— (a) 54, (b) 45, (c) 24, (d) 44.

(iii) Expanded core curricular items for the visualy unpaired are followed more in— (a) General Schools, (b) Open Schools, (c) Special Residential Schools, (d) Non-Formal Schools.

(iv) This model of Education for the disabled can make the universalisation principle, a reality.— (a) Dual Teahing Model, (b) Itinerant Teacher Model, (c) Resource Room Model, (d) Home Based Education Model.

(v) Instructional material for adaptation of curriculum for disabled children has been developed by— (a) The National Open School, (b) General School, (c) Special Residential School, (d) Non-Formal School.

(vi) Inclusive education is essential in India for— (a) Larger coverage of disabled children population, (b) Huge cost for running special school will not be needed, (c) Implementation of EFA will be possible normaly, (d) All of the above.

(vii) The categories as per percentage of disability is— (a) 4, (b) 5, (c) 6, (d) 3.

Answer Key :

(i) d, (ii) b, (iii) c, (iv) a, (v) a, (vi) d, (vii) a.

Unit - 2.3 □ Teaching Principle

Structure :

2.3.1. Introduction :

Rehabilitation council of India (RCI) in the preambel of B.Ed. Spl. Ed. Programme–2015 has stated rightly and significantly about the new treand of teaching–moving away, from 'show and tell' to 'learning by doing'. A disabled child is a child first like all normal children, then we are to consider the disability accordingly in course of teaching-learning process. Hence we are to glance first. The principles of teaching prescribed for normal children as all these are applicable to all categories of children and then the disability particularly the visually impaired will be taken for discussion.

2.3.2. Objectives :

The clear knowledge of the principles of teaching will help the teacher-students

(i) to take their teaching in the goal-roented right direction without groping or hovering aimlessly

(ii) to take steps for teaching properly both in inclusive, integrated, special & home-bomb set-ups.

2.3.3. Child Centred Approach to Teaching :

• Meaning of Child Centred education—

The claim of the teacher, 'I teach children, not subjects' implies care for the 'whole' child–his/her personality, needs & learning style and not just for his/her academic process. Child-centred education stresses the need for taking care of the child, its growth and development. It requires 'individualisation' of approach, so that one must study each child carefully, keep observations over a period of time, study the growth and development in sensory-motar, intellectual, emotional, social, language areas and soon.

• Key Concepts of Child Centred Eudcation—

Aim—The aim is development of the total personality of the child

Programme—Programme is to be activity based with different teaching strategies.

Pace of Learning—It is to be based on childrne's needs & abilities.

Teaching-Learning—Teacher's role is that of a facilitator in learning and development.

Discipline—It is to be achieved through the maintenance of positive human relationships between teachers and pupils.

• Need for child—Centred Approach and its implications

(i) The child is the most important agent in his/her own learning. Out of the three components of learning situation—the child, the teacher and the environemt, the prime place is occupied by the child. It means that curriculum must be

thought of in terms of activities and experiences which appeal most to the child.

(ii) Children learn best when they are active. Learning takes place through a continuous process of interaction between the learners and its environment.

(iii) Knoledge or information is not the goal. Self-realization is the goal. Personality and character are more important than the subject matter.

(iv) Child-centered approach is more psychological than logical. It emphasises the process rather than the product.

(v) Child-centered approach gives boundless freedom to the child under the creative and sympthetic direction of the teacher.

(vi) One single exposure to an experience does not affect all the necessary co-ordination of the physical and mental faculties of a child to preserve the net value of exposure. Hence there have to be repetitive exercises and drills to give a certain knowledge and the efficiency and tenacity of skill and value.

(vii) A Child is a unique being and has a Specific role to play. The teacher's role is to help the child to conform to its unique role, both in its spirit, habitual values, choices and consistent behaviour patterns.

(viii) The child's sense of wonder and astonishment and his/her natural curisoty leads to a learning process which should be encouraged by the teacher.

- Limitations of Child–Centred Education–

Child-centred education has a few limitations which must be takne care of by the teaches. Too much freedom is likely to engender egocentricism in children. Children may grow to be unwilling to accept reasonable authority. If all the times and at all places likes and dislikes, preferences, whims and interests of children are elevated above the matured judgements of parents and teachers, it may result in undesirble outcomes. Adams, therefore, wanted that both the children and thier teaches should be on the same footing of inportance.

Pragmatically speaking, learning cannot be child centred always in absolute term. Child-centred education implies that each child may have a separtae learning activity besides a few group activities. Perhaps no nation can afford to spend so

much money, resources and time on child-centerd education. There age so many children under the charge of a teacher that it is rather imossible to attend to the specific needs of children individually.

- **Corrective Measures :**

Of Course emphasis on child-centred eduacation tends to free the child form the tyranny of the traditional approach to education like 'chalk and talk', 'bookish knowledge' and 'The supremacy of rod'. Implict in all the positions of child-centred education is that the teacher must be pripared to give initiative to the learner in the educational encounter. The role of the teacher is child-centred education is encouraging self-disciplinary function of the child which cannot be over-emphasied. It can be summed-up as—

(i) Motivating children.

(ii) Developing trutst and confidence in children's capacity to learn.

(iii) Becoming as a resource for crating meaningful learning experiences.

(iv) Accepting the indivicual and the group.

(v) Participating as a member of the group in guidind learning.

(vi) Becoming sensitive to the child's needs and tinteracting in a way that would provide a sense of feeling and seeurily.

(vii) Recognising and reinforcing the individual contribution.

2.3.4. Principle of Teaching :

The educators and philosophers have emphasised certain principles of teahcing which the teachers are expected to bear in mind for making their teaching effective, efficient, and inspirational. These are classified as psychological general principles.

2.3.4.1 Psychological or Learning of Teaching :

(i) **Principle of Activity or Learning by Doing :** Children are active by nature and any process or method that is not based upon the students activity is not in accord with the progressive educational theories. Rousseau considers the child as a "hero" in the drama of education and as such he/she must be

allowed to play. The dominant role. So the first principle is to keep the class active. The great vitality of our children cannot be permanently restranied without providing a positive purpose which will interest the children and give them opportunitics for ovservation and the use of their hands. This is to offer them the fulfilment and satisfaction which nothing else confers.

Activity does not mean mere physical activity. To develop all sides of pupils' personality it is necessary for them to be active in all ways, to exercise all the powers they have.

(ii) **Principle of Playway :** This principle is closely related to the principle of learning by doing. According to Froebel play is the chief activity of childhood. It gives joy, freedom, contentment and inner and outer peace. It holds the source of all that are good. But "without rational conscious guidance", says Froebel, "childish activity degenerates into animals play instead of preparing for those tasks of life for which it is designed."

(iii) **Principle of Motivation :** The teacher will do his/her best to motivate all children in the lesson-motivation arouses the interest of children and once they become interested, they are willing to concentrate and work. Motivation is developed by the following techniques—(a) utilising the instinctive tendencies of the children in an effective manner; (b) satisfying the curiosity of children; (c) utilising all the senses of children; (d) relating closely body and mind; (e) linking teaching-learning with life.

(iv) **Principle of Self Education :** Best teaching is enabling the child to learn by his own efforts. Teachers must fire the imagination of their students. Children must be left free to express themselves, for the best education is self-education. Teachers must stand aside. They must talk less, explain less and direct less. The essential acitivity in teaching is not the adjustment of child to teacher but is to enable him/her to adjust himself/herself to the environment and also to change the environment to adjust himself/herself. Teaching must enable the child to work independently and without the teacher at a later state.

(v) **Principle of Individual Differences :** No two children are alike. Teachiung to be effective must cater to individual differences of children.

(vi) **Principle of Goal Setting :** A definit goal must be set before each child according to the standard expected of him/her. Short term or immediate goal

should be set before small children and distant goals for older ones. It must be remembered that goals should be very clear and definite and the children must understand there goals.

(vii) **Principle of Stimulation :** Burton has said teaching is the stimulation, guidance, direction and encouragement of learning. Ryburn emphasises, the guidance of the teacher is mainly a matter of giving the right kind of stimulus to help him/her to learn the right things in the right way.

(viii) **Principle of Association :** Thorndike points out that things we want to go together should be put together. Many different things or ideas which want to go together should be associated with each other. They should form a part of one process. Then it becomes easier to make the students understand their relationship.

(ix) **Principle of Readiness :** This principle is the indicative of learner's state of mind to participate in the teaching learning process. Readiness is preparation for action.

(x) **Principle of Effect :** This principle states that a response is strenthened if it is followed by pleasure and weakened if followed by displeasure.

(xi) **Principle of Exercise or Repetition :** According to it, the more a stimulus induced, respense is repeated, the longer it will be retained. This principle has two subs-parts-principle of use and principle of disuse.

(xii) **Principle of Change and Rest :** Psychological experiments in learning have demonstrated that fatigue, lack of attention and monotony can be overcome by making appropriate provision for change, rest & recreation.

(xiii) **Principle of Feed-back and Reinforcement :** Learning theories point out that the immediate knowledge of the results and positive reinforcers in the forms of praise, grade, certificates, taken money and other incentives can contribute to make the task of learning joyable.

(xiv) **Principle of Training of Senses :** Sesnses are the gateways of knowledge. The power of observation, discrimination, identification, generalisation and application can only be apprpriately developed through the effective functioning of senses.

(xv) **Principle of Group Dynamics :** Under the influence of group behaviour,

appropriate changes in the behaviour of the members of the group can take place. Indivicuals composing the group think and feel as the group feels, do as the group does. A suitable climate for group dynamics is to be created in the classroom environment.

(xvi) **Principle of Creativity :** Opportunities should be provided to the students to explore things and events and find cause-effect relationships. This principle envisages that every student possess some element of creativity which must be explored and developed to the maximum extent.

(xvii) **Principle of Correlation :** Gandhiji was of the firm view that correlation should be the basis of all work. He advocated that correlation of the learning task should be established with the craft, physical and social environment.

2.3.4.2. General Principles of Teaching :

Successful teaching necessitates that the tehacher comes down to the level of the pupils and at the same time assits them in rising above it. To a great extent, the principles of teaching to be followed depend upon the age of the pupils, the subjects and topic of the lesson. However, there are certain general principles which should underline the teaching of all subjects. Actually there is no clearcut dividing line between psychological and general principles of teaching.

(i) **Principle of Definite Goals or Objectives :** Destination or goals of teaching-learning must be clear to the teachers and the students. Goals and objectives keep them on the track. Definiteness of goals helps in planning, excuting and evaluating every step, phase or act of teaching-learning process.

(ii) **Principle of Child Centredness :** The entire teaching endeavour is for the child. Therefore, it is essential that teaching strategies should cater to the aptitude, interest and abilities of the students. In the drama of education, child should be assigned the role-of 'hero'.

(iii) **Principle of Individual Differences :** No two children are alike. Teachiung to be effective must cater to individual differences of children.

(iv) **Principle of Linking with Life :** Teaching can never be performed in a vacuum. It is always in a social context. In the teaching of all the school subjects, exampled from everyday life should be given their due place.

(v) **Principle of Correlation :** Knowledge is one 'whole'. Various ideas and events are inter related. There exist links among various subjects. Correlation of the present events can be made with the past. Similarly future can be visualised on the basis of the present happenings or state of affairs.

(vi) **Principle of Active Involvement and Participation of Students :** Teaching-learning is a two-way traffic. Traditional teaching was almost teacher-centred. There was very little scope for the involvement of the students. The tacher used to teach and the students would liesten to him passively. The new teaching emphasises that the students must actively participate in all the stages and steps of teaching-learning.

(vii) **Principle of Cooperation :** Classroom environment becomes lively when the teacher and taught work in union, helping each other in carrying out the task of teaching and learning. All the participants have the same common interest. Naturally they must cooperate with teacher.

(viii) **Principle of Remedial Teaching :** All the students do not learn with the same speed and accomplishement. Some lag behind and need extra coaching. The teacher has to find out where the fault lies and think for positive measures. He may have to arrange for remedial or compensatory or extra teaching for any particular group of students for removing their specific difficulties.

(ix) **Principle of Creating Conducive Environment :** Physical as well as social environment of the classroom plays a vital role in motivating the learners. Arrangement of light, fan, furniture etc. should be properly attended to. There should be proper discipline and order. The teacher should be sympathetic but firm.

(x) **Principle of Planning :** Planning determines the quality or success of any task. Planning in teaching involves the preparation of the lesson notes, provission of teaching aids and working out strategies to be adopted in the delivery of the lesson.

(xi) **Principle of Effective Strategies :** Teaching process to be effective must adopt proper means, strategies and tacts. A teaching strategy is a generalised plan for a lesson which includes structures, desired learning behaviour in terms of goals of instraction and an outline of planned tactics necessary to implement the strategy.

(xii) **Principle of Flexibility :** Strategies should serve as guides for effective teaching .Strategies may have to be changed, if the classroom situations, so warant. Teaching is a complex task and a live phenomenon. The possibilities of alternation in planned strategies cannot be ruled out at the excurtion stage. A teacher must be quite imaginative and resourceful for adapting himself/ herself and his/her teaching to the requirements of the teaching-learning environment.

(xiii) **Principle of Variety :** A variety of teaching aids and strategies should be adopted to motivate and sustain the interests of the students. Variety serves as great tonic for creating fresh environement and checking boredom and lethargy.

(xiv) **Principle of Activity :** Children are active by nature and any process or method that is not based upon the students activity is not in accord with the progressive educational theories. Rousseau considers the child as a "hero" in the drama of education and as such he/she must be allowed to play. The dominant role. So the first principle is to keep the class active. The great vitality of our children cannot be permanently restranied without providing a positive purpose which will interest the children and give them opportunities for ovservation and the use of their hands. This is to offer them the fulfilment and satisfaction which nothing else confers.

Activity does not mean mere physical activity. To develop all sides of pupils' personality it is necessary for them to be active in all ways, to exercise all the powers they have.

2.3.5. Maxims of Teaching :

The maxims of teaching are very helpful in obtaining the active involvement and particepation of the learners in the teaching learning process. They quicken the interest of the learners and motivate them to learn. They make learning effective, impirational, interesting and meaningful. They keep the students attentive to the teaching-learning process. The maxims will be discussed under course code A3 and unit-3 in Semester-II. Here only the points are to be noted :

(i) Proceed from the Known to the Unknown

(ii) Proceed from Simpl to Complex.

(iii) Proceed from Easy to Difficult.

(iv) Proceed from the Concrete to the Abstract.

(v) Proceed from Particular to General.

(vi) Proceed from Indefinite to Definite.

(vii) Proceed from Empirical to Rational.

(viii) Proceed from Psychological to Logical.

(ix) Proceed from Whole to Parts.

(x) Proceed from Near to Far.

(xi) Proceed from Analysis to Synthesis.

(xii) Proceed from Actual to Representative.

(xiii) Proceed Inductively.

In the ultimate analysis it must be observed that the maxims are meant to be our servants and not masters. Moreover, by and large, all are interrelated.

It is also to be kept in view that children differ in their aptitudes, capacities, interests, mental and physical make up. Different maxims suit different situations and different children. It is, therefore, essential that a judicious use should be made of each maxim.

2.3.6. The Principle of Teaching for the Visually Impaired Children :

The discussion of a general principles of teaching for all children is nowover. We will proceed to highlight the specific principles of teaching required to be obeyed in course of dealing withthe visually imparied children. Ever since formal education of blind children began, enlightened teachers of the blind have practiced such principles, mostly without being theoretically aware of them.

(i) **Educational Set Up :** To what extent these principles can be applied in the actual process of teaching depends somewhat on whether visually Handicapped children receive their education as a group in an environment geared to their

needs, as residential schools are, or as single individuals in general school facilities where they may have an understanding general classroom theachers and should have a resource or an itinerant teacher who is aware of and knows how to meet their special needs.

(ii) **Need For Concrete Experience :** In order to give the blind child a knowledge of the realities around him/her the teacher must aim at providing him/her with a wide variety of concrete ecperiences. Thus making up to a certain extent for the limitaion in the range and variety of his/her experiences. For the blind child it is not important to learn concertely about exotic things; his/her primary need is to learn about his/her environment.

The young seeing child is familier with a multitude of characters and scenes of domestic and social life. Experiences of such things as these, and of their observed relationship, are the very stuff of the child's mind, and on them the teacher draws daily activities for the purpose of teaching. The deepest and most fundamental needs of blind children are a rich and intimate experience of common things, and a direct acquaintance with the many characters that move across the scenes of daily life, and the activities of the characters. The children must learn to know persons and things in terms of their own sensory persons and to meet the situations in which they occur on an independent footing. For these no verbal substitutes will serve. They need the direct contact with the world.

Concreteness in teaching can be achieved in essentially two ways : by having the children observe the object or situation itselt or by providing them with a model of the object. In all cases if there is army possibility, reality is to be preferred. Children must be given sufficient time for the observations. Study excursions and field trips can familiarize children with many situation which otherwise world remain abstract for them. A model or replica can only be a substitute and will always in some ways be incomplete or distorted, unless the teacher is careful and persistent in making the students fully aware of size and other distotions.

The use of embossed picture to give blind children an equivalent of visual illustrations has often been tried but never had only lasting success. Embossed outlined representates of essentially two-dimenssions objects, such as leaves, a fork, or a butterfly, may be identified by the blind children and even a man's figure will

be understood because the child will relate the body parts to his/her own bodily experience. Such embossed pictures cam even result in wrong ideas, for instance when a four-legged animal is shown with only three legs, since the fourth-leg is visually hidden. Though limitations are there diagrams and embossed maps are the most valuable from the early school years on in developing spatial concepts and basis relationship needed for orientation and other purposes.

Giving blind children a knowledge of the realities around them is not a question of enriching the child's vocabulary, but of giving him/her a sense of reality about his/her environment. It will prevent him/her from following into a pattrn of unreality towards which he/she may be inclined for other reasons. It will also be valuable to him/her in his/her social life, because in conversations he/she will not feel left out by lack of concrete knowledge but will be able to take an active part as the result of experiences which he/she in common with others.

(iii) **Need For Unifying Experiences :** Blind children are at a services disadvantage in experiening things and situations in their totality. Touch permits simultaneous observation only of objects that can be embraced by either the hands or the body. Larger objects must be observed by consecutive touch motions and in many instances only parts of them are observed in this way. Vision permits a unification of observations and it structures and orgainizes discrete impressions received by other sensory organs. The lack of unifying integrative experiences must be counteracted by teachers who give blind children opportunities to experience situations in their totality and to unity part-experiences into meaningful wholes. The teaching by study units is an important means of achieving this end. By this method blind children will not only learn the facts of a given topic as seeing children do, but will also recognize how the different parts combine into a total object, situations, or topic.

(iv) **Need For Learning by Doing :** As a result of their blindness and because of the environmental reactions to this handicap, blind children have in general significantly less opportunities for self acting. Special attention must be given at home and school to encouraging blind children to do as many things for themselves as are desirable and compatible with a well-conceived time economy. That blind children from an early age on are not visually stimulated

by their environemt to imitate activities of others combined with tendency of many parents to be content with just satisfying their childs bodily needs, causes a tendency toward inertia in many blind children. The general approach should be to encourage blind children to learn to do things themselves with as little assitance as possible. The blind child should be encouraged to become independent and sucessful at the endeavours like eating, dressing, playing, meeting people and getting about. The more situations he/she has learned to master, the stronger will be his/her feelings of security nd the more positive his/her self-concept.

As regards the creative activities of blind children, educators should not impose thier 'seeing taste' on blind children, but should let them create things according to their own concepts and emotions. The visual aspects of a piece of clay modeling are irrelevent for the blind child, who works by touch and expresses his/her sculpture his/her touch concepts of things and events. Thus the result may be a product which in no way resembles the visually perceived objects, but truly expresses what the blind child knows and feels. It is the process that counts not the product.

From all that has been said about individual considerations and about special educational needs of blind children it is obvious that the teaching can fulfil his/her role only if the number of children in his/her group is small. This is true for classes in residential schools as well as for facilities in local schools, with either resource room or itenerant teachers. The actual number of children will depent on such factors as grade level, age, subject matter (is the upper grades), and geographic location (for itinerant teachers). In general, between five and ten children can normally be assigned to one teacher. If special conditions exist, such as an itinerants teacher serving blind children in primary grades, or if the children are multitian dicapped, a much smaller teacher-pupil ratio, sometimes one to one, is essential for success.

2.3.7. Some more Points to be taken into Granted

Apart the above mentioned major points the educators should keep in mind the following in course of teaching a blind child.

(i) Age of on-set of blindness is of crucial importance.

(ii) Extent of residual vision determines the nature and dominance of visual imagery.

(iii) Stability of residual vision and suffering from tranma.

(iv) Knowledge of family back-ground.

(v) Contrive concrete life situations to give the visually handicapped child experiences that he/she would miss day-to-day life.

(vi) Where necessary take the visually handicapped child to experiences that he/she cannot have at home or in the class-rooms.

(vii) Use models where absolutely indispensible.

(viii) Organise visits to Museums, Post office, Markets, and social and cultural centres in the city, town or in the neighbouring areas where the school in located.

(ix) Touching objects should not be prohibited. Indeed, it should be encouraged.

(x) Verbal description should be supported where possible with concrete experiences.

(xi) Reward and punishment should be judiciously given to motivate the visually handicpped child to interact extensively with his environment.

(xii) Diagramatic representation in braille or in large print should be used where necessary to give the visually handicaped child an idea not only of two dimensional perspective but also of the three dimensional world.

(xiii) Learning by doing should be the basic principle of the teacher. In this way the formation of imagery and concepts could be fostered.

(xiv) Play at home and in the classrooms should be extensively used as a tool promoting cognitive development.

(xv) Acting should be used in appropriate situations to improve the visually handicapped child's expression and strengthen his retention and recall.

(xvi) Role playing should also be used to give a visually handicapped child experience of life situations.

2.3.8 Let us Sum up :

The principles of teaching help to navigate the goal-orented teaching-learning process efficiently, competently and successfully. Committed quality teaching is expected from an educator. Hence each and every educator should know well and obey the principles of teaching. These days are the days of child-centred education. Hence the child whether normal or disabled sarticualarly visually handicapped should be given appropirate principle-based teaching-learning environment, care and attention. Principles-psychological and general help the education to be endowed with proper techiniques and strategies for education of all children. But for the visually impaired children some specific princi;es are to be takne into account in addition to the two principles meant for all.

- **"Course Work" :**

(a) Write the process and name or articles needed for preparing 4 modles and 4 maps for teaching the visually handicapped children.

(b) Give critical analysis of these models and maps.

2.3.9 "Check Your Progress" :

1. 'Learning by doing'—What type of activity does it mean ?

2. Principle of Individual Difference—Explain.

3. Remedial Teaching—Does it prove teachers lack of competency ?

4. Type of education set up of a visually handicapped child changes the role of the educator—Clarify.

5. In the process of teaching-learning of visually handicapped child the age of on-set blindness is of crucial importance —Explain.

6. Teaching of totally visually handicapped and low vision child differs—Justify.

2.3.10. Check Yourself :

Tick the appropriate answer—

1. Child is the 'hero' in the drame of education has told by—
   (a) Johann Heinrich Pestalozzi
   (b) John Dewy
   (c) Jean Jacques Rousseau
   (d) Alfred Binet
2. Principle of motivation does not incluce the technique of—
   (a) linking teaching-learning with life
   (b) relating closely body and mind
   (c) satifying the curiosity of chidren
   (d) utilising only the sense of vision of the children
3. Planning of teaching does not involve—
   (a) preparation of excessive talk
   (b) preparation of lesson notes
   (c) making provision of teaching aid
   (d) working out strategies for deliversing lesson.
4. The most fundamental needs of visually handicaped children do not include–
   (a) rich and intimate experience of common thing
   (b) a passive sedentary tendency
   (c) a direct acquaintance with the characters that move across the senses of daily life.
   (d) the activities of the characters that come in their contact.
5. The teaching of visually impaired multiple disabled (VIMD) children the ideal teacher-pupil ratio should be—

(a) one to more than ten

(b) one to eight

(c) one to one

(d) one to ten

- **Answer Key :**

(1) (c), (2) (d), (3) (a), (4) (b), (5) (c)

Unit-2.4 □ Expanded Core Curriculum Concept & Areas.

Structure

2.4.1. Introduction :

Curriculum planning for visually impaired children follows the same maxims as for normal children. The motto is to facilitate children's learning. The effects of

visual impairment necessitate some adjustment in the planning and exceution of the curriculum. Some skills for learning which ae natural to a sighted child need to be developed through a well planned programme hence the need for expended core curriculum/plus curriculum. Similarly the visully imparied child needs some special in-puts from the teachers besides what is given to every child. He/She also needs, at times, special inputs in terms of equipments or efforts.

2.4.2. Objectives

After completing the subs unit the teacheer/students arc expectable to be able to :

(i) Describe the concept of curriculum in general and its implications for teaching visually impared children for classroom practice.

(ii) Specify curriculum adaptations for teaching viusally imparied children.

(iii) Identify the components of Expanded core curriculum/plus curriculum activities for visually imparied children

2.4.3. What is Curriculum ?

(a) Education is treated as a race, with its obejctives as the goal and curriculum as the course leading to the goal. The traditional system insinted on curriculum as the acquisition of mastery over certain skill and certain areas of knowledge. According to modern educational thoughts curriculum does not mean only the academic subjects traditionally taught in schools, but includes the sum total of experiences. That a pupil receives through a variety of activities in the school, in the classroom, library, laboratory, play grounds, in formal contacts between teahcers and pupils. In this sense, the whole life of the school becomes the curriculum, which can touch the life of the students at points and helps in the evolution of a balanced personality. Modern curriculum. Thus, "covers all the wider areas of individual and group life. It encompasses all meaningful and desirable activities outside the school provided that these are planned, organised and used educationally."

The concept of curriculum reflects the following concerns :

(i) Curriculum exists only in the experiences of the children.

(ii) Curriculum inclueds more than the content to be learnt content does not constitute the curriculum until it becomes a part of the childrens total experiences.

(iii) The school curriculum is an enterprise in guiding living.

(iv) The curriculum is a specialised learning environment deliberately arranged to direct the interest and abilities of children towards effective participation in the life of the community and the nation.

2.4.3.1 Functions of the Curriculum :

(b) The functions of the school curriculum are deformined by two factors :

(i) Taking into account the varying capacities and the endless potentialities for good or evil in the life of the community and the nation (Social goals)

(ii) Problems encountared by the individual for living in the society (individual goals)

The curriculum is the instrument through which these two factors are brought together; it consists of experience through which children achieve self realisation and at the same time learn to contribute to the building of better communities and a better nation.

2.4.4 Need For Spcial Approaches For Visually Imparied Children :

(a) The whole gamut of the curriculum for children in school and community is centered around two significant aspects, "The Opportunity" and "The Experience". Often children are provided with opportunities, but the mere provision of opportunities does not mean acquisition of experience. The understanding of the self and the world is not a 'whole' when expereience is denied.

Sighted children have advantage over visually impareed children in the acquistion of knowledge through experience. The vision, which brings an enormuos amount of information in just a glimpse enables sighted children to have rich experiences in a "Natural Way". The learn the experience as a "whole". But the

learning of visually imparied is not "whole" but in "Pieces" of information. Thus there is a significant diference between the two groups. The sighted having "Natual Learning" and the visualy imparied child having "Mediated Learning". There is therefore a need for different approaches to the curriculum for visually-imparied children.

2.4.4.1 Objective Effects of Blindness Causing Experiential Deprivation In Visually Impaired Childern :

(b) According to Dr. Berthhold Lowenfeld, The objective effects of blindness are :

(i) Reduction in the range and variety of experiences—As vision is the major mode of acquiring information, the visually-impared child learns in a fragmentary way. He/She has to have time to put these bits & pieces together to form a concept which is not exactly like that of the sighted but which is sufficiently like ours to enable us to communicate.

(ii) Reduction in the ability to move about—Blindness tends to create a very sedentary kind of existence. A visually impaired person may just be inactive become of fear, lack of skill in using information and lack of skill in moving about within it.

(iii) Control over the environment and self in relation to its—By just being blind and not knowing where you are, to whom you are speaking and what you are facing, being unable to controla the self and environment in relations to self is a significent defecit.

Except these, all other effects such as etiology, extent of blindness and all other mitigated experiences are purely subjective. The three obstacles in the form of "objective effects" to independence and self-fulfilment are the underlying reasons for all the "Plus Curriculum" or "Expended Core Curriculum" set forth for visually impaired children.

2.4.4.2 Curriculum for Inclusive or Integrated Education Programmes :

(c) A visually impaired child in the regular class is one among many children in That class. The curriculum meant for visually impaired children of, the inclusive/ imtegated programmes should be more like than 'unlike' that of the sighted

children.Most information is received by the visually impaired child through 'Touch' and 'Hearing'. Hence these experiences must be planned to facilitate the acquisition of at least the near normal experience acquired by other children through 'vision'. Hence there is no need for a special curriculum for visually impaired children in the inclusive/integrated education programmes but special approaches based on multi-sensory experiences are needed. To learn the general curriculum, the visually impaired child should possess some skills which are peculiar to blindness and dealt with under 'Plus curriculum'/'Expended Core Curriculum'.

In the light of this, the curriculum for visually impaired children may be stated as follow :

2.4.5. General Curriculum With Modified Experiences :

The general curriculum which containes more "visiual experiences" and less "non-visual expereience" must be analysed to convert visual to non-visual experiences for the betterment of the concept development of the visually impaired child. The four steps are given hierarchy of preferred management of "educational experience".

(a) We give Duplicate experiences; but cannot always, so we

(b) Modify experience some times;

These modifications may be in terms of—Content, Method of Display, Type of Material used, Response Expectations From The Child.

(c) Sometimes, there is no suitable means of modification, and we must therefore substitude one kind of lesson for the visually impaired child, which as closely as possible, approximates that presented to his/her sighted peers. But even then, and specially in the early days, we may sometimes.

(d) Omit a lesson

These four steps are very important in giving experiences to the visually impaired child through the mutli sensory material. It has been found by experience that higher the academic standard, easier it is to produce the material exactly. That is most omissions occur during the first year.

The pattern shifts quickly, and in no time at all, omissions are rare, substitations are imfrequent, modifications continues to be desirable; but of the greatest

impertance is the fact that more and more duplicate experience are possible.

The visually impaired children could be divided into two main types.

Those for whom braille or recorded study materials must be the medium of learning.

Children with low vision who can read porint with magnification in good and defused lighting.

By and large, in both cases no significant modification is required in the curricular content. However, many boards of secondary education in India have exempted visually impaired children from appearing in maths and science in the 10th and 12th class Examinations. They are allowed to take music or an additional at language. Therefore, many schools teach science and maths to children from 6th to 8th class but discontinue the subjects from 9th class onwards. This is not absolutely necessary in the light of modern equipments now available. It is possible for a visually impaired child to take 10th or 12th class examination with maths and science. Over the years changes may come.

Particularly in West Bengal Board of Secondary Education does not allow entire exemption of any subject, to the visually impaired students appearing at the final examination. Only alternative questions of equal marks are set against a few questions in the subjects like Mathematics—The construction protion and in Geography & Life Science against the pictorial portion alternative questions are set other wise all papers & questions are like the normal students. In all standards from 1st to 10th no change in there.

Special equipments are needed for teaching Braille, Mathematics, Science and expanded core curriculum subject. Embossed maps are necessary for teaching social studies.

It may be necessary for a teacher to adapt his/her teaching stategies to suit the needs particularly of visually impaired children. The following points should be borne in mind.

(i) Show models instead of illustration.

(ii) Orally spellout, whatever you write on the black-board.

(iii) Assignment should be taken either in Braille or on any andio system. In case of non-feasibility of the both, oral examination is necessary.

(iv) Orient the child fully to his classroom and the shcool building. Do this bit by bit so that an accurate image is formed in the child's mind.

(v) It will be preferable to adopt what is sometimes called the buddy system. This means association of one other peers who will take the responsibilities of giving the visually impaired child lecture notes, taking him out when necessary, playing with him/her in suitable hour.

(vi) Envourage the child to be as mobile as possible within the school campus.

(vii) Let him/her use in the classroom, all the equipments he/she needs for doing all the subjects taught in the shcool.

(viii) Given the right environment, equipments and encouragement, the blind child should be expected to perform well as the rest of the students.

(ix) Blindness should not be treated as an excuse for post performance.

(x) Encourge all the students in the class to intreact freely and without inhibition to the blind child.

(xi) Enforce the same discipline to the visually impaired child as it applies to other children. There should be no positive discrimination in matters of disciplines with visually impaired children.

(xii) Low vision children usually do not require special methods except giving them more time for doumg assignments . It they have mobility problem, some visual orientation may by given.

2.4.6. Expanded core curriculum/plus curriculum :

The expanded core curriculum commonly known as plus curruculum is not 'extra' for visually impaired children best 'compensatory'. These are the basic skills on which the general curriculum skills are developed. These skills are skills peculiar to blindness, which a sighted person does not need. Experiences have shown that the strength in, the 'expended core curriculum' or 'plus curriculum' always faclitates better learning of the general curriculum. The special areas are as follow :

2.4.7 Special areas

(a) Braille

Braille Louis Braille himself blind, introduced the Brallie System for the educational purpose of visually impaired, persons. Braille is a tactical approach to reading and writing for the visually impaired, in which the letters are formed by a combination of raised dots in a cell. The cell consists of six dots which can be arragnged in 63 combinations or characters. The finger tips possess sensitive nerve endings which make touch reading possible. The area covered by light pressure of the finger tips on paper gives the necessary information to the child to discriminate between different configuration of braiile letters, written within the braille cell, which is approximately 6mm vertically and 3.6 horizontally. The braille system is classified as Grade I, Grade II and Grade III levels.

In Grade I, each letter of the braiile word is specified. Grade I bariile is sufficient for those who do not read braille for extensive reading. It is sufficient for lower primary school children and adult blind people of rehabilitation. Programmes when they try to learn braille for the first time.

Grade II respresents the contracted form of the Grade I braille characters, prefixes, suffiexes, pronouns, conjanctions are denoted by contractions. Grade II braille is needed for the child to proceed to higher education. Mastery over Grade II braille helps the learner to read more Braille books in less time. Braille is based on phonetic scripts and, therefore, Indian languages and all world languages are easily written and read in braille.

Grade III braille system is not followed by many visually impaired people because of its complexity. It is the complicated form of the Grade II Braille and presented more or less in a form of a "short hand system"/stenography. A few visually impaired people who take note and record the proceedings of meetings learn Grade III braille.

● **Braille Reading :** Braille learning requires some pre-requisite skills called 'Braille mechanism', which means the efficient flow of hands over the braille lines with proper hand and finger position together on the dots from left to right. When the right hand reaches the end of the line, the left hand should, retrace the line which was just read, and identify the begining of the next line. To develop this braille

mechanism, certain tactual discrimination activities should be undertaken as these activites have great importance for developing the sensitiveness of the finger tips. Tactile tolerance needs to be diveloped among visually impaired children for effective Braille reading. Learners having no good braille mechanism just "butterfly" over the braille sheet. Scrubbing hampers the speed of Braille reading. Braille reading should come first and Braille writing next.

● **Brailled Writings :** Braille state and stylus are commonly used by learners in developing countries for writing purposes while writngs, the child has to punch the dots from the right to the left of the slate. Braille writing frame is used placing the paper in between the two parts of the frame (Guide). After this, the child has to reverse the paper and read it from left to right. In order to write Braille effectively, the child should possess skills such as (i) Flexibility of fingers, (ii) Fine motor co-ordination and control of muscles, and (iii) Competency to read familiar Braille codes. Writing in Braille slate and stylus needs enormous muscles control, and thus may be introduced during the second year of a child's schooling.

To develop speed in writing, the lefthand should always identifiy the braille cell while the right hand punches the letter in the previous cell. The stylus and the left hand should be placed on consecutive cells. By this the lefthand assists the right hand which holds the stylus to identify the correct of in the braille cell. While writing, the stylus should be held vertically. Tilting the stylus may make holes on the braille paper, which spoils neatness in braille writing work. Braille typing with the use of Brailles can be used with learners of higher classes.

Sophisticated electronic equipment such as talking machines, audio materials and optacons make the reading acitivity of the child easier. However, presently this advanced technology is available only in developed countries. Whatever the innovations, Braille continues to be the primary mode of communication for visually impaired learners.

2.4.7.1 Orientation And Mobility :

(b) Independence in travel breaks the sedentary condition caused by blindness. Two important skills are necessary to attain such an independence-one being the knowledge of the environment and the other, moving from one place to another in the environment in realtion to oneself.

The skills that are related to the use of the remaining senses of the sightless person to establish one's position in and relationships to, significant objects in the enviroment are widely classified as orientation skills. In the environment the abilities of the individual to move from one place to another are classified as mobility skills. By nature both skills are interlinked. A sightless learner with excellent orientation skills and graceful mobility skills is said to have attained physical independence and such learners are easily acceptable by the sighted community.

'Orientiation and Mobility' is a typical area in the development of the sightless student in which the client needs absolutely individualised instruction and practical assistance mobility is not a subject for discussion with the sightless persons, it must compulsorily be practised by them. This area warrants individual, one-to-one attention because the onset of blindness in individuals leaves them sometimes with no visualisation of the world. Approach wise, there are differences between a bornblind (congenital) and adventiously-blind (acquired) person. The later-age blind may have acquired some concepts about the objects of this world; for one born-blind, everything needs to be started from scratch. Therefore, the techniques of the orientation and mobility, briefly "O & M" are the some but the approches are different for the visually impaired individuals.

- **Sensory Training & Mobility :**

The good and efficient training in the use of the remaining sense enables the sightless individual for independent travel. The loss of sight is compensated by the sense of touch & hearing. Sensory stimuli enable a sightless persons to determine his position or direction. Such sensory stimuli are classified as "clues". Hearing plays a dominant role in mobility. The important areas required for sensory training may be branched off as follows.

(i) **Sense of Hearing :** Sense of Hearing is essential as we rely on the auditory information of the world consciousty or unconsciously. The sight less student has to depend on this sensory training to a great extent. It overcomes the difficulties of the student suffering from lack of visual perception.

(ii) **Sense of Touch :** Exploration of an object is worth a thousand words used in explanation. Objects, perceived through touch, determine the defininess of the objects and help the individual to form a neat conception of them. More

than mobility, the sense of touch has a lot to do with the reading of the sightless student. It has its limitations as large objects lie beyond tactile exploration. "Wholeness" can be perceived by the child only when the object is within the reach of the non-seeing child's hands.

(iii) **Sense of Smell :** A good nose voluntarily effects the information of the objects which can be smelt. These are sensible clues for a traveller during his/her travel, the smell of a gutter, the smell of smoke in a chemical industroy smell of flowes in a garden or smell of a kitchen, are sources of information for him/her to locate where he/she development of this skill speaks well of the chemistry laboratory of the child's school experience. This also helps in the day-to-day life of the individual. If the student has an "educated nose" his surroundings can trasmit enormuos information to him/her.

(iv) **Sense of Taste :** Of course, this sense has less utility in the mobility of the child, as it does not ralay any details form the outside world. Unless the sense is provoked, sensing is not spontaneous. This skill helps the sightless person to associate the names of the substances with the sensed taste. For example, sweet, sour and hot should be associated with the substances which provide such experiences. For a sighted person, seeing such objects is a stimulus. The conditioning by observation is natural for a sighted person, best for the sightless, it is a vital experience.

(v) **Sense of Kinesthesis :** The feeling of the body is responding to external stimuli, otherwise the kinesthetic sense, enables the child to get certain information like cold, heat, breeze and elevation of surface. Mobility is guided by his/her efficient kinesthetic sense.

It is a musunderstanding to suppose that the loss of sight leads to extraordinary abilities in the other senses. A child who has acquaired the necessary sensory skills, orientation to environment becomes easier and this leads the child to a greater level of confidence in mobility.

● **Types of Mobility Techniques :**

The major techniques which are widely accpted are the sighted guide

techniques, guide dog techniques and the long cane techniques. All the sysems have their own advantages and limitations. It must be left to the discretion of the individual to select the particular system that suits his/her need and temparament.

(i) **Sighted Guide Techniques :** It is the skill of traveller with a sighted comparion. It is learning for both the sighted and the sightless persons.

(ii) **Guide Dog :** It is popular is Europe and America. The system could not stand the test in developing countries for many reasons. It involves an enormous cost.

(iii) **Long Cane Technique :** The system in widely accepted by many countries recent years for independent travelling of the sightless. It is acceptepted for many reasons—it is in expensive; it is handy; the length can be adjusted according to the height of the person in collapsable canes; the techniques are simple; the techniques learnt in a know environemt can be aplied in an unknown environemt and so on. Despite the advantages, some sightless are reluctant to use the cane as device for mobility because of the feeling it confirms that the person is sightless. But people who have realised the richness of the cane techniques advocate the long cane for their sightless fellows.

(iv) **Safety Techniques :** Safety techniques are neessary for sightless persons to protect body is a restriected environment and outdoors.

A sightless person is said to have mastered the Orientation and Mobility Training when he/she feels safe in moring from one place to another, when he/she feels secured in the environment and moves gracefully. Safety, security and gracefulness are the three main outcomes expected on mobility training.

2.4.7.2 Daily Living Skills :

(c) Education of sightless children has undergone periodical changes. Many new methods are being developed in educating sightless children. They trained to be independent so that they may be accepted by the society. As a medium of communication, the invention of Braille has made a big break through. This enables visually impaired children to overcome to a great extent the losses of written communication. Similarly the invention of Orientation & Mobility skills, using the

devices like long cane and other mobility aids, helps sightless people to more freely from place to place without much dependence on others. This independence is slowly changing the attitude of the society towards sightless people because they perform many activities like sighted people.

Daily living skills are helping then to socialise effectively in the community. Due to the less of sight, visually imparied people have the disadvantage of not getting the visual feed-back, which in turn, retards the child from possessing the skills normally acquired by imitation. Therefore, it becomes vital to teach the daily living activities to the child who is visually imparied. Daily living skills together with the orentations and mobility can make the child readily accepted by the seeing world.

● What is Daily Living Skills ?

Daily living skills are those abilities that enabled the disabled child to carry out his/her day-to-day acitivities without assistance or mininum assistance. Development of these skills insitells confidence in the child to enter the mainstream of normal children.

Loss of sight at times retords the daily living skills of the child. Lack of opportunity and environment are the reasons for the development lag in sighless children. The goal of education set forth for sightless children should not be too general, for this may fail to give any measure of how the student can achieve a goal and under what circumstances. It is necessary to prepare a list of individual task, ranging from the use of the hands to the preparation of a complete meal. This, in itselt, however, is not sufficient. There is need to develop a cirterion to judge the success of the student's performance in each standard.

● Training Strategies :

Where, when and how to teach daily living skills to the usually impaired children need to be specified in clear behavioual terms before taking up education for such a task. In designing a daily living skills development programme, one should have the following objectives.

(i) Observation of the daily living skills exhibited by sighted children at various grade levels.

(ii) Diagnosing the diffculties faced by sightless children in acquiring the skills possessed by sighted children in a natural manner.

(iii) After the necessary diagnosis, pre-requisite skills must be difined for sightless children that will lead them to perform daily living skills in a better way.

(iv) Even though daily living skills are defined in a general context, they must be classified according to grade levels and, if possible, age leves.

(v) For each skill, a methodology must be developed. Methodology should primarily mention the teacher approach to a specific task.

(vi) Some daily living skills may warrant certain aids for learning. Such aids and appliances should be made available for teaching those specific skills.

(vii) Teaching skills should not stop with training. The teacher should design his/ her own criteria for evaluating the acquisition of the required skills by the visually impaired child.

(viii) The abilities developed through the training are sustained when there is a continuous follow-up. The teahcer plan should also suggest the various sources, either direct or indirect that can provided follow-up services after the nceessary skill-development training. The evaluation should be on an individual basis.

● **Areas of Interest in Daily Living :**

The efficient use of daily living skills depends upon the ability in sensory training, as well as the mobility training of the child. For example, in the task of going to the market and buying vegetables, the skill of going to the marked is mobility, whereas the skill of purchasing, choosing. The right vegetables, getting change and speaking to people, constitute the daily living skills. Hence, the art of daily living and mobility teaching should go together. The main areas of interest in daily living activities may be classified as follows.

(i) Techniques to be used at meal time.

(ii) Shopping Techniquies.

(iii) Care and maintenance of clothing and personal belongings.

(iv) Maintenance of personal recrods.

(v) Systematisation of daily routine.

(vi) Money identification and money management.

(vii) Use of Telephone and other devices.

(viii) Development of tactile, kinesthetie and olfactory abilities.

(ix) Skills in using electrical appliances.

There is a feeling that deficit in the daily living techniques is one of the most continually humiliating and frustrating of all the shortcomings imposed by blindness. Times are changing. There are now better opportunities for visually imparied children to erase this feeling by demonstrating there skills. Inclusive/Integrated education programmes and the introduction of new methods of teaching in residential programmes are importent signs of development in this vital area. It is the duty of every person working for the education of the visually imparied to provide them ample opportunity. Then they can show their potentiality; they can overcome the embarrassment caused by this limitaion; they can rejuvenate themselves to self-sufficiency and responsibility. It is the art of daily living that works wonders.

2.4.8. Co-curricular Activities in Brief :

Recreational & physical activities are the personality buildings and should not be left out from curriculum. Intellectual activities like singing, playing instrument composing poems, eloquence etc. Physical activities like games & sports, skimming etc. intellectual-cum-physical activities like dance, etc are very essential for the sightless children.

2.4.9. Difficulties To Cope With :

One of the main difficulties in this area is the slow pace of the performance of the visually impaired children. It is true that the sighted and the sightless could take part in some activities with little modifications. As sighted children tend to opt for "fast activities", they may be reluctant to join with the visually impaired child, not because of blindness but owing to the slow pace of performance of the sightless. Therefore, the approach in this context should be purely on an individual basis. This

adjustment is necessary in the Inclusice/Integrated education programmes for visually impaired children.

On no account, should the curriculum in the inclusive/integrated education programme be changed only for the sightless child. On the other hand, it is not advisable and feasible as the inclusive/integrated programme is a part of the 'General' school which has a common curriculum. Therefore, it is suggested that we provide modified and special approaches, so as to reach the 'near normal' experimence at per with sighted children. This should be the main objective of the currimulum approaches in inclusive/integrated education programmes.

A rich curriculum approach depends upon the nature of instructions expected by the sightless child, type of materials used by the child, the method of teaching followed by the regular teacher and the nature of remediasl and resource instructions organised by resource teachers/special educators. A thorough understanding of these aspects facilitates understanding of a better approach in adapting the curriculum content of sightless children in the inclusive/integrated eudcation programme. Experience makes it clear that visually impaired children in fact gain more than they lose through this special approach. The understanding between the resource theacher/ special educator and regular teachers makes the curricular appracch more effective. It constantly improves and there is no saturation point.

2.4.10. Let us Sum up :

Curriculum meant for sighted children should be followed in the education for the sightless children without major omissions. Research studies (Jangira, 1986; Mani, 1982) indicate that 80-85 percent of the general curriculum could be duplicated for visually disabled children. The rest can also be provided through modified and substituted experiences. Omissinons are rare and it is for less especially at the higher grades when the students learn more of content.

Expanded core curriculum/plus curriculum, therefore, is a foundation for development in general curricular areas and teaching of these skills should be an integral part of the educations of visually disablled children.

2.4.11 "Check Your Progress"

Give four examples of content for visually impaired children in the integrated/ inclusive set up one each.

1. **Duplication :**
2. **Modification :**
3. **Substitution :**
4. **Omission :**

2.4.12 Check Yourself

Tick (✓) the alternative which you consider to be the best choice.

1. Curriculum means the—
   (a) content taught in the classroom
   (b) experience acquired at home
   (c) totality of experiences of the child in his/her day-to-day life
   (d) all content and experience deliberately planned for educational purposes.
2. Modern curriculum covers—
   (a) the individual life experiences
   (b) the family life experiences
   (c) indivicual and group life experiences
   (d) none of the above
3. Provision of opportunity—
   (a) ensures provision of experiences for visually impaired children
   (b) does not ensure provision of experiences for sightless children
   (c) is the same as experience
   (d) mentions the needs of visually imparied children

4. Visually impaired children—
   (a) learn in pieces
   (b) learn the content as a whole
   (c) learn like sighted children
   (d) none of the above
5. The learning of visually impaired children is treated as—
   (a) natural learning
   (b) mediated learning
   (c) unnatural learning
   (d) isolated learning.
6. Reduction in the range and variety of experiences—
   (a) is a subjective effect of blindness
   (b) is impersonal loss for visually impaired children
   (c) is an objective effect of blindness
   (d) reduction in experience provided to children
7. Sightless children in inclusive/integrated education programmes need—
   (a) the same curriculum meant for sighted children
   (b) the curriculum for special shools
   (c) the same curriculum meant for sighted children with various approches
   (d) a different curriculum
8. More duplicated experiences may be provided for the visually impaired child at—
   (a) the primary level
   (b) the secondary level
   (c) the pre-school level
   (d) the college level

9. The skills peculiar to blindness are known as—
   (a) plus/expanded core curriculum
   (b) extra curriculum
   (c) co-curriculum
   (d) core curriculum
10. Visually impaired children can participate more effectively with sighted children in—
   (a) physical activities
   (b) intelltual activities
   (c) social activities
   (d) recreational activities
11. Grade II braille represents a contracted form of—
   (a) prefixes, suffiexes, pronouns
   (b) sentences
   (c) words
   (d) capital letters
12. Univesally accpeted technique of good braille reading is—
   (a) using the right hand forefinger
   (b) using the left hand forefinger
   (c) using both the forefingers
   (d) using all fingers
13. The teacher should always compel the students to follow the correct techniques—
   (a) yes, it should be
   (b) no, it need not be so
   (c) teaching should be through correct techniques, but the student may be inclined to go his own way. Therfore, the teacher should not compel him/her.
   (d) it should left to students.

14. Braille reading is—

(a) as fast as print reading

(b) a little slower than print reading

(c) same as print reading

(d) none of the above

15. Braille writing on a slate is done—

(a) from right to left

(b) from left to right

(c) anywhere in the braille cell

(d) in the cell horizontally

16. Reading braille and writing can go together simultaneously—

(a) yes

(b) no

(c) braille writing should come after braille reading

(d) braille writing and braille reading have no relationship

17. The abilities of the individual to move from one place to another are known as—

(a) orientation skills

(b) plus curriculum skills

(c) mobility skills

(d) walking skills

18. Teaching of mobility skills should be the same for all visually impaired children—

(a) yess it should be the shame for all

(b) no, it depends upon the onset of blindness

(c) no, it depends upon the daily living skills

(d) it depends on the capbility of the teacher

19. Orientation skills are greatly influenced by—

(a) the sense of taste

(b) the senses of thouc and hearing

(c) the sense of smell

(d) the vision

20. Widely used mobility techniques in developing countries are—

(a) sighted guide techniques

(b) guide dogs

(c) electronic aids

(d) long cane techniques

21. Guide dog techniques cannot serve the purpose of developing countries owing to the—

(a) inadequacy of training methodology

(b) enormous cost of the system

(c) prejudice among visually impaired people

(d) shortage of dogs

22. At the primary shools, The visually impaired child should—

(a) not be taught O & M skills

(b) be taught the long cane techniques

(c) be taught the pre-cane mobility skills

(d) be taught guide dog techniques

23. In an inclusive setting the sightly child can be oriented to the school environment in a better way by—

(a) the sighted peer group

(b) the regular teacher

(c) the special educators

(d) the parents

24. Daily living skills are—

(a) expanded core curriculum skills

(b) extra-curriculum skills

(c) skills for performing day-to-day activities

(d) skills for maintaining good health

25. Skills required for the readiness of the child to learn day-to-day survival skills are—

(a) daily living skills

(b) pre requisite skills

(c) academic skills

(d) curriculum skills

26. For teaching all daily living activities—

(a) a common methodology should be followed

(b) methodology should be based on the nature of activity

(c) methodology is not necessary

(d) none of the above

27. Daily living skills should be taught according to—

(a) age levels

(b) grade levels

(c) ability level

(d) living background

28. Aids are necessary for teaching—

(a) all daily living skills

(b) certain daily living skills

(c) academic and not daily living skills

(d) none of the above

29. Learning of daily living skills by an individual—

(a) continues even after the schooling

(b) continues till the end of the school year

(c) takes place at different time intervals

(d) takes place in pre-school years

30. Listening to music is—

(a) an academic skill

(b) an auditory skill

(c) daily living skill

(d) none of the above.

Answer Key :

(1) (d),	(2) (c),	(3) (a),	(4) (a),	(5) (b),
(6) (c),	(7) (c),	(8) (b),	(9) (a),	(10) (b),
(11) (a),	(12) (c),	(13) (c),	(14) (b),	(15) (a),
(16) (c),	(17) (c),	(18) (b),	(19) (b),	(20) (d),
(21) (b),	(22) (c),	(23) (a),	(24) (a),	(25) (b),
(26) (b),	(27) (c),	(28) (b),	(29) (a),	(30) (c).

Unit-2.5 □ Commonly Used Low Cost and Advanced Assistive Devices

Sturcture :

2.5.1 Introduction :

Over the years, it has been considered that the only occupation a blind person can pursue is related to playing musical instruments and singing. It is widely still believed that auditory faculties are more developed in the blind. As schools for the

blind were set up in various parts of the country during the late 18th century, the doors to higher education opened. While some studied law and became successful lawyers and sloicitors, other opted to enter the teaching profession some pursued careers in Railway & Bank sectors, in social work and others setteled to work as telephone operators etc. In recent years, however, blind persons have ventured to take up opulent managment studies. They have embrased technology and as a result, have positional themselves into very competitive front.

Advancement, in technology has brought in revolutionary changes in the quality of life and patterns of work and leisure. Assistive devices have helped the visually impaired to achieve better levels of independence through more access to information. The technology available is (i) traditional-low-tech, (ii) modern-high tech, and (iii) low-vision. However, useres have to depend on imports for high-tech devices. Technology has tremendous potentialities for facilitating economic rehabilitation of the visually impaired and thee is a need to improvise technology in the absence of universal designs. The government of India has taken initiatives to promot technology and assist the disabled to purchase such devices however, there are still a fiew bottlenecks. New areas of technological development have to be explosed. So that the objective of equal opportunities for the visually impaired is achieved.

2.5.2. Objectives :

After reading this sub-unit the student-teachers will be able to :

(i) Understand what assistive devices are to be used for the visually impaird learners;

(ii) Gain a general understanding of assistive devices available in the country for the visually impaired learners.

(iii) Gather knowledge when and where to use particular type of assisitve device.

(iv) Have clear idea of using assistive devices in different educational pleacement of the visually impaired learners;

(v) Acquire readiness for use of assistive devices before its handling is practical;

(vi) Know how to make teaching-learning-materials (TLM)

(vii) Estimate the contribution of modern technology to make assistive devices visually imparied friendly.

2.5.3 The Importance of Technology :

The twentieth century has witnessed phenomenal advancements in technology in almost every sphere. Those developments have brought in revolutionary changes in the quality of lives of human beings. Today, even a common man is utilising specialised equipment to his/her advantage in activities of daily living and productivity. No doubt, technology has influcened our patterens of work and leisure.

Technology has played a very important role in mitigating the limitiations imposed by a disability. The use of assistive devices has helped persons with visual impairment to achieve new levels of independence and facilitate their rehabilition print continued as a barrier to access to information until recently, however, modern technology has paved the way for using Internet with audio. Braille and large-character displays resulting in improved independence access to a large amoent of printed information. Technology advances have prouded numerous new devices also challenges to the visualy impaired.

Technology encompasses a broad spectrum of assistive devices. Quite a number of these devices both low-tech and high-tech are now available and used side by side by the visually impaired all over the world.

2.5.4.1 Tradition—Low-Tech Devices :

In India most of the visually impaired continue to use traditional and low-tech devices for linguistecal, computational, recreational, mobility and activities of daily living purposes. Most of these devices are low priced also.

A. LINGUSTICAL :

- **Braille Writing Devices :**

[i] Inter-Line Writing Frame :

It is used for writing interline standard Braille characters. The frame comprises a wooden baord/plank, with holes on either sides, a metal/plastic frame called guide, a reversible paper clamp and a stylus. The guide is fitted in these holes and brought gliding down as writing progresses. The metal/plastic foot-scale like guide has two flop joined with a hing. Each cell in the top flap of the guide has

six notches representing six dots. The bottom flop of the guide has fine pot-hole craters cell-wise which helps to emboss raised dots on the paper with punch of the pin of the stylus. The guide has two lines of Braille cells. The clamp is fitted at the top of the board/plank with pins to hold the paper in position. The clamp has a small swivel stud for locking and holding braille papers. When one side of the paper has been brailled, the clamp with the paper still held, is turned over, as a until the binding margine is made automatically. The paper holding clamp is of two types--in one type two-fold clamp is fixed on the plank and can be opened when needed; in other type the clamp holding with the paper can be reversed. Writing progresses from right to left. The brailled paper to be read requires to be reversed and reading progresses from left to right. This is the simplest and low cost appliance for Braille writing.

[ii] **Interpoint Writing Frame :**

Plastic made frame has two flaps joined with a hing, and is opened like book opening. The top flap has braille cells with thorough cell notched holes. The bottom flap has only cell-wise very fine pot-holls craters. The paper is set in between the two flaps and paper holding corner pins locks the paper with a little snap. Writing needs punch by the stylus. Writing and reading method is same as like inter-line frame. Only differences between Inter-line and Inter-point are : (i) Wooden and Plastic; (ii) no need of gliding the guide in the Inter-point frame; (iii) cell in the Inter-point is smaller, (iv) In the Inter-point frame no writing on the reverse is possible; (v) the Inter-point frame is light in weight and easily portable. The Inter-point is convenient for the students from standard-III.

[iii] Taylor Post-Card Frame :

It is used for writing small braille characters on one side of the paper. The corner pins are arranged in such a way braille can be read without removing the paper from the frame; when the top section is lifted, the paper remains attached to it.

[iv] **Pocket Braille Frame :**

The four-line pocket braille frame produces small braille characters on one side of the paper. This is specially used for making small and occasional notes.

[v] **Stylii / stylus :**

Braille writing in the above explained frames is not possible without a sytlus. For punching to produce Braille characters this is the sole device and hence is indispensible. These are produced with plastic or aluminium or wood handles of various shapes like ball-head, bull-head, concave head etc. to suit individual needs. The pins of all stylii are made of stainless steel and the handles are of ploished hard wood or synthetic material. These are normal low-cost stylus. But it runs a little risk as the pin remains open.

[vi] **Safety Stylus :**

Aluminuin body, the handle is caved, the pin is fitted with a screw. While writing the pin-side is taken out unscrewing from the handle. Screw side of the pin in set tightly in the handle hole. After use the pin is set again in the handle hole.

[vii] **Braille Kit :**

It is rexine coated or a decorative wood box 36 cms × 28.5 cms. with a weight of 3085 Gms and contains the itmes like—■ Braille Frame; ■ Braille Writing Pocket Frame; ■ Two Stylii ■ Taylor Mathematical Board with Arithmetic Types; ■ Abacus; Rubber Sheet; ■ Spur Wheel; ■ Foot Ruler; ■ Measuring Tape; ■ Compass Set; ■ Some Braille Papers; ■ Circket Ball; ■ Some Play-way Braille Utter Composing Apparatns; ■ Folding Mobility Stick (cane); ■ Signature Guide. The itness may very sometimes.

[viii] **Braille Writer :**

It is a top-side writing machine for writing on one side of the paper, enabling to read as it is written. This machine can be compared to a normal type, writer with a major difference that it has only nine keys, three for paper setting and six for embossing and one spacer.

The brailler embosses combinations of six dots in a braille cell.

The Brailler is made of metal with an enamel finish, with plastic key-tops and adjustable margin stops. The paper is roller-fed and line spacing is achieved by pressing a special key. The most popular Braille wirters are :

■ Perkins Braille; ■ Stensby Braille writer; ■ Taj Brailler;

■ Worth trust Perkins Brailler; ■ Minal Brailler.

[ix] **Braille Paper :**

To write braille in all the above mentioned apparatus the must item is thick braille paper, the standard size of Braille paper is 22"×28" and weight of each gross is 8.6kg.

Manufacturers :

■ Titagarh Paper Mills Ltd; ■ Andhra Pradesh Paper Mills Ltd; ■ West-Coast Paper Mills Ltd; ■ Rohtas Paper Mills Ltd; ■ Orient Paper Mills Ltd.

[x] **Braille Duplicators (Braille Copier) :**

(a) Thermoform Machine :

It is semi-automatic braille duplicating machine. It is useful for taking out multiple copies of the braille matter on the 'Braillon' sheets from the master copy generally prepared on the braille paper. These brailler sheets are plastic made. This machine operates on the principle of vacuum and high temperature. It is power operated Foreign made is 'American Thermoform' and indigenous is 'Induthrem'.

(b) Vacuum Forming Machine :

It is available in standard sizes. It is used for taking out multiple copies of braille matter using PVC, HIP, Acrylic & ABS sheets with 2mm thickness.

[xi] **Braille Box :**

It is a play-way learning Braille device for the 1st year learners. Wooden finish the smallest size of the is 5"×10"×2". Braille cells with holes are set in the box. Thin round headed aluminium pegs are used to compose braille charaters—letters, words.

It is available in larger sizes.

[xii] **Study Material Listening Appliances : Talking Book.**

The material recorded on cassettes has emerged to be the most popular mode of imparting education to visually impaired persons. As Braille books are very heavy, damaged prone, require high cost in production, storing difficulties and many newly blind persons are unable to learn braille easily and many of them don't like reading braille talking books are gradually becoming to be the best viable alternative. In the present day for listening recoded study maerials visually impaired personss use mostly C.D. Player or I. Pod.

B. COMPUTATIONAL / MATHEMATICAL APPLIANCES :

[i] Taylor Frame :

The surface of this frame is an aluminium or a palstic sheet with star shaped holes in straight rows. The holes are octagonal having eight angles. The lead pegs knwon as types are double-ended having a line on one side and two dots on the other. The pegs move in the holes clock-wise starting from position 6 of the clock. The rotating of these pegs with line side in the hole in different angle position denotes the digits starting from 1 to 8. Then the type is set up-ward down i.e. doted side with rotating will donote 9, 0, +, –, ×, ÷, ., =, signs. This frame is suitable for teaching arithmetic to visually impaired learners specifically in lower classes. There are Algebric types also for doing Algebra from standard-VI.

[ii] Abacus :

A simple instrument for performing rapid arithmetical calculations. Abacus is an oblong frame having 13 to 15 vertically arranged rods called column on which beads slide up and down-Each column is separated by a bar technically known as centre bar. The beam supporting the beads is marked with a raised bar between every third rod. The bars serve to indicate the decimal point and other units of decimal measure.

The abacus is to be held straight. The bottom portion of the centre bar contains 4 beads in each column and the upper portion of the centre bar contains one bead in each column. It is to be held in such a way that the 4 beads below the centre bar are at the bottom and the single bead above the centre bar is at the top.

Each bead in the lower portion of the abacus denotes 1 unit and the bead above the centre bar denotes 5. Each column denotes the position of the number it represents. the extreme right column is the units column, the 2nd column from the right is the tens column, from the right 3rd is the hundred column, the 4th column from the right is the thousand column and soon and so forth.

[iii] Counting Device :

Wooden Board with holes. Aluminium round-headed pegs are set in the holes. It helps to learn counting and to develop pre-requisite skill of Taylor Frame by setting. The pegs in straight line and to place the pegs in the holes properly and swiftly. It is for use of the 1st learners.

[iv] **Geo Board :**

Wooden Board with fixed pegs. Geometrical shapes are made and practiced with rubber bands. It is for use in upper classes.

[v] **Talking Calculator :**

Audible calculator in synthesized speech useful for calculation, clock, alrm and calendar. Manufactured by casio and sharp companies, Japan.

[vi] **Primary Mathematics Kit :**

Specially designed kit for the visually handicapped children to comprehend mathematics concepts. It contains ■ a plastic box; ■ slide strips, ■ number boards; ■ fractional strips; ■ braille clock; ■ geometrical shapes—geomatrical figure tray; ■ magnetic board; ■ geometrical devices.

[vii] **Spur Wheel :**

A serrated revolving wheel in a plated metal handle. It is used for making continuous embossed lines on the reverse side of the paper.

[viii] **Compass Set :**

It includes a foot ruler, a protractor and a set square in nylon and a spur wheel. It enables visually impaired students to use the same techniques as his sighted counter part. the foot ruler and set square have embosseed markings for their convenience. The compass has a removable component fitted with a toothed wheel for drawing embossed dotted lines on the reverse of the braille paper.

[ix] **Geometry Mat :**

A rubber sheet for use as a base in conjunction with the spur wheel and braille paper for making geometrical drawings.

[x] **Opisometor :** A bell rings each time the disc moves a distance of one meter. Useful for mapping and understanding mathematical problems in length and perimeter.

[xi] **Some Other Mathematical Devices :**

- Counting Stand/Device
- Graded Abacus

- Fraction Boards
- Hundreds, Tens, Units Board
- Geometric Shapes and Solids etc.

C. GEOGRAPHY DEVICES :

[i] **Sensory Quill :** It is an equipment for obtaining a raised line format of any writing or drawing. The height and texture of the line can be altered. Useful in learning hand writing skills, mathematics, science, drawings & spellings.

[ii] **Raised Relief Plastic Maps :** Vacuum formed plastic maps printed in strong colours with names in letter press for the benefit of person with low vision. The main towns are shown by large dots and principle rivers by depressions. Braille symbols denote the names of seas, main rivers and towns, a key to which is given in the guide. The boundaries on political maps are indicated by raised lines.

[iii] **Geographical Features Model :** Models of features of mountains, vallies, lands & rivers are there in vacuum plastic two diamenssion sheets & three dimenssions all in briht colour useful for both visually impaired and low vision person.

[iv] **Relief Globes :** A plastic globe in textured relief. The lans masses are shown in different colours. The principle towns are indicated by raised dots; rivers and lakes by depressions. Dotted lines indicate the tropics, arctic and antarctic circles, the international date-line and meridians. The names of oceans and the main land are shown in Braille.

Nystrom's Bathymetric world model is raised relief map of the world with oceans drained. All under-water features are exposed. A cassette recording explaning the features is supplied with the product.

[v] **Braille Diagram Board :** Metal sheet fixed on a board with closely formed holes in which round-headed pins are stuck to form maps and diagrams.

D. SCIENCE DEVICES :

[i] **Conductivity Apparauts :** Demonstrates the difference in the heat conductivity of copper and iron. It consists of a wooden stand with horizontal heating rods.

[ii] **Vacuum Printed Diagrams :** These diagrams are also available for various body systems, anatomy, physiology etc.

[iii] **Three Dimenssional Raised Relief Plastic Charts :** Rigid PVC sheet, printed and formed in multi-colours charts available—

(a) **Botany General :** It includes typical plant cell, plant meiosis, plant mitosis, Ribo-Nuleic Acid, Bacterial forms, spirogyra and Funaria-common moss in botany.

(b) **Botany Advance :** It depicts fertilization, T.S. dicot leaf, dicot stem, types of placentation.

(c) **Zoology : Vertebrate and Invertebrate :**

(d) **Human Physiology and Human Body Systems :** It includes human skeleton, circulation system, heart nervous system, a section of the brain, muscles, digestive system, the ear, the nose and the eye.

(e) **Human Reproduction :** It includes male and female reproduction organs, fertilization and foetus.

E. MOBILITY DEVICES :

(i) Canes : The types of canes available are as follows :

[a] **Symbol Canes :** Made of sections of light metal tubings, generally aluminium or its allyos, joined through the centre by means of an elastic cord. The canes fold up conveniently for carrying in the pocket or handbag. When matically fall into position.

Devised for portability and not intended to be used other than as a guide aid and an indication that the user is a visually impaired person. This cane is populaely known as a Brailled folding stick.

(b) **Guide Cane :** A stronger version of the symbol cane and intended to be more of a mobility and but not a means of support. The four sections, covered with ribbed plasitc sleeving, are joined through the center by means of an elastic cord enclosed in nylon sleeving. It is fitted with an elastic loop handle and a standard nylon tip.

(c) **Long Canes :** A wooden or aluminium stick of 85 to 90 centimeters. Three models arc availabnles—■ rigied ■ two pieces and ■ four pieces.

The aluminium cane is generally sleeved with PVC material, having a rubber grip and a nylon tip with or without a crook. The nylon tip at the bottom touches the ground and generates very subtle sound to indicate difference of surface of the ground. the lower lastpart of each cane measuring is generally red, sometimes white. The cane day is observed in the name 'White Cane Day'.

[ii] **Electronic Travel Appliances :**

An ETA is described as a device that sends out signals to sense the environment within a certain range or distance, processes the information received and furnishes. The person with relevant information about the environment. Most of these devices are based on integrated circuits and emit sound or tactile signals.

As ETAs are not available and prevalent in India, it is not very necessary to give description of these devices. However for the sake of information, some names of these devices are noted here.

- Lind say Russesl E-model Path Sounder
- C5 Laser Cane
- Ultrasonic Torch
- Sonic Guide
- Light Probes
- Mowat Sonar Sensor
- Nottingham Obstacle Sensor
- Electro Cortical Prostheisi
- Electro Roftalm
- AF B's Computerzed Travel Aid.
- Polaroid Ultrasonic Travel Aid.

For details about ETAs, refer to NIVH publication "Selected Abstracts & Annotated Biography On Orientation and Mobility"

[iii] **Mobility Show Cord :** A plastic show card to help visually impaired persons to cross busy roads and to hail a taxi.

[iv] **Mini Beeper :** A battery operated, hand-held electronic gadget having application in mobility, recreation, sports and obstacle location.

F. RECREATION GAMES & SPORTS :

(a) Recreation :

[i] **Playing Cards :** Superior quality standard playing cards with reverse embossing in standard Braille on the top left corner.

[ii] **Chess :** A wooden board with the black squares raisud and all the squares drilled in the centre for the reception of the pegged chessman. Holes are provided at each end for pieces not in play. The pieces are of uniform height, the white having a point with pin at the top to distinguish them from the black.

[iii] **Dominoes :** Made of plastic and having raised black dots on a white back ground with black inset pieces on the reverse. These dominoes are ideal for palyers with low vision also.

[iv] **Brahma Puzzle :** The puzzle consists of three pegs on a wooden base and eight discs of different diameter each with a hole in the centre. The purpose is to transfer all the discs from the peg to another without allowing any disc to be placed over a smaller one.

[v] **Audible Ball :** Made of strong good quality plastic in which hole has been punched. Small metal ball bearings are inserted. The hole in sealed. These small balls are inserted for creating sound enabling the visually impaired children to locate the ball.

An ordinary good quality ball of plastic of 5 cms. radios can be converted into an audible ball by drilling a hole, putting smal size pebbles or ball-bearings and then sealing the hole using the soldering rod. The ball can be used for playing cricket.

[vi] **Draught Board :** A wooden board with sunken playing squares. The colours of the men are distinguished by size. Pieces of double thickness are used as kings.

A variety of other games as listed here under have also been adapted for the visually impaired.

■ Bezique maker; ■ Bridge scorer; ■ Lexicon; ■ Happy Family; ■ Whot; ■ Patience Board; ■ Chess Clock; ■ Jigsaw Puzzle; ■ Electronic Ball; ■ Bectle Game; ■ Centre-peg; ■ Scrabble; ■ Dice and Dice Cub; ■ Nine Men's Morris; ■ Tic-Tac-Toc; ■ Unilock Word Building Device; ■ Checkeres Set; ■ Rattle Bells.

Only chess, playing cards, Nine men'sn morris, Draught Board and checker set

and various puzzles are available in India. Other games are available from the Royal National Institute for the Blind, London.

(b) Games & Sports :

[i] **Football, Basket Ball and Soccer Ball :** These are equipped with a small electronic beeper which is battery powered and emits a compact sound. The beeper is held within a moulded cavity designed for easy access to 'on' & 'off' switch.

[ii] **Cricket :** It is becoming very popular in India. The standard rules have been drawn. It can be played using the audible ball as mentioned earlier.

[iii] **Stilt Walking :** The ordinary strong bamboo poles or wooden poles with foot rest at a height of 30 cms from the ground can be used for training the visually impaired in stilt walking.

[iv] **Swimming :** It is also emerging to be a popular sport among visually impaired persons. The normal swimming pool with sound indicators on the sides and lane ropes with thermocol pieces can be used for training them in swimming.

[v] **Atheletics :** The normal tracks with some precautions and safety measures can be used for training the visually in race, shotput, Javelin Throw, Sack-race, musical chair, hit the target etc. In the present time the visually impaired runs in conjunction with the sighted runner as guide/nevigator binding very loosely with a tether on their wrist. For one pair double track is used.

[vi] **Table Tennis :** It has become a popular in-door game for the visualy impaired in many south-east countries. The normal table tennis table with some modifications in the net and the sides can be used for the purpose.

G. OTHER DEVICES :

(a) Daily Living Devices :

[i] **Clocks & Watches :** A standard alarm clock is adapted for the use of the visually impaired. It has strengthened hands and an open plastic dial having the hour positions indicated by two raised dots at the 3, 6, 9, 12 positions and single dots at the remaining hours.

Manufacturer : HES Limited, Patel Estate

Jogeshwari (west), Mumbai-400102

[ii] **Travel Alarm Clock :** This adapted clock as mentioned above is fitted into a case. The whole clock is packed into the case when folded. When opened, the case also serves as a sland for the clock.

ALIMCO Alarm clock has time setting knops. The dial is encased in a transparent plastic cover which can be easily removed from the top for obtaining access to the clock dial. The raised dots are provided for indicating hours with two dots for 3, 6 & 9 position, 3 dots for twelve hour position and signal dots at the remaining hour positions.

[iii] **Pocket Watch :** A hunter watch, the hinged cover of which opens when the winding knob is depressed. Fitted with strengthened movements and dots as mentioned earlier.

[iv] **Ringer Timer :** A one-hour ringer, in streamlined plastic case for timing any operation when an audible reminder is required. Each five minute period is indicated on the embossed setting dial by two dots and the first quarter hour is additionally marked to show the individual minutes.

[v] **Wrist Watch :** It has the appearance of an ordianary wrist watchs with the front cover being fitted with a transparent centre. The front can be lifted with a lever mechanism when the winding knob is depressed. The general arrangement for dial marking is two dots on the 3, 6, 9 & 12 positions, and a single dot at the intervening hours, but for the 12 O'clock position two or three dots according to the particular watch.

Manufacturer : Hindustan Machine Tools Ltd...
Watch Marketing Division
26/1, Levell Road, Bangalore–560001

[vi] **Talking Time :** This is an electronic watch as well as alarm clock fitted with an electronic device which announces the time whenever the knob is pressed. It is possible to set time, date, day and alarm etc. All the settings are audible in signals, it is thus possible for a visually impaired persons to do the settings himself/ herself.

The most popular brands are sony and sharp. In India, Sikkim tme corporation limited (SITCO), Sikkim has introduced talking wrist watch. The SITCO has established marketing divisions in all the major towns in India.

(b) Personal Devices :

[i] **Sound Beacon :** This pocket size electronic device emits a sound which can be varied from a loud continuous whistle down to low intermittent beeps at various rates. It is generally used as a homing device.

[ii] **Notex :** It consists of a rectangular base and flaps made of high-density polythene hinged together. It differentiates Indian currency notes of different denominationes. It considers length and breadth of a currency note for its differentiation.

Available from : NAB Louis Braille Memorial Research Centre Mumbai.

[iii] **Magnets :** Round, square and u-shaped magnets for picking up pins, small nails and other iron or steel objects.

[iv] **Signature Guide :** A template to guide the visually impaired persons in placing signature in proper place.

[v] **Address Template :** Made of cardboard with four raised lines to guide a visually impaired person to write his/her address on Inland letters and envelopes.

[vi] **Light Probe :** Full function light detector may be adjusted for desired sensitivity to light.

[vii] **Location Finder :** Own house, apartment or office can easily be found out with protable, light weight location finder. A siren, attached outside location, will sound on pressing transmitter attached to a key chain.

[viii] **Other Personal Devices :** The Americal Foundation for The Blind and Maxi Devices are supplying a variety of personal devices for the visually impaired persons as noted here under. These are so far not available in India.

- Thermo voice : announces temperature
- Talking Blood Pressure & Pulse Monitoring Kit
- Becton Dickinson Magni Guide : for accepting barrille of insulin syringe
- Insulin Needle Guide
- Talking Blood Glucose Moniforing Kit
- Big Print Address Book.

- Talking Wallet
- Locklid Saucepan
- Weight Talker
- Key finder
- Clothing Identifiers
- Tactile Braille Signs
- Eye-Ease Eyedrop Guide
- Medicine Spoon

For the present we will set aside a long list of vocational training, Home Management, kitchen etc equipments modified and developed for use by the visually impaired persons.

2.5.4.2 Low Vision Devices :

There are two main types of Low Vision Devices :

Optical Devices which use lenses to magnify objects

Non-optical Devices and techniques which make objects easiler to use.

(a) **VTS Link :** It is a portable large print computer and work station, specially designed to meet diverse needs of the visually impaired. It provides people with low vision with the most comprehensive solution to computer access available today. It features a custom-made high contrast flat display screen which present a sharp clear image of character up to 75 mm.

(b) **Visualtek :** Closed circuit TV magnifying system magnifies upto 60 times the normal size with wide variation of light intensity and btoh positive and negative images.

(c) **Schmidt Reader :** It is also a close circuit TV and functions on the same principle as the visualtek.

(d) **Overhead Projector :** It is supplied with screen, stand, lamp and transparency sheets with magnification facilities.

(e) **Magnifying Lenses :** These lenses have many applications other than

reading; they make everthing bigger & brighter. Following models of magnifier lenses are available.

[i] **Mounted Magnifying Lens :** It has an extra large sized Fresnel lens as magnifier. It provides large visual field and leaves both hands free for manipulation of reading material or hand work. It is useful for quick scanning of large surfaces and objects.

[ii] **Flexible Arm Illuminated Magnifier :** It has a large sized precision glass lens and a circular tube light mounted around the lens. The lens-light assembly is mounted on a spring balanced stand with feather touch movements and a reach of 900 mm, allowing the lens to be placed in any position and freeing both hands of the observe for work. It is an ideal aid for inspection, quality work in electronics, instrumentation and precision engineering industries, gems and jewellery, geology and hospitals. (Lensel Product Catalogue)

[iii] **Magnifying Binoculars :** It is handy in close work, both hands free.

[iv] **Book Magnifier :** Having a large field it enables reading of printed material such as newspapers, paper back books, fine legal print etc. It magnifies one page at a time.

[v] **Illuminated Magnifier :** Provides magnification along with illumination of the object. A range of models, including battery opearted ones. Ideal for viewing maps, directorices, botanical and geographical. Specimens when ambient light is not adequate. Useful for close work.

[vi] **Paper Weight Magnifier :** It is a moulded plastic lens. Clear plastic allows light through to copy.

[vii] **Super Loupe :** It is handy 2x magnifying lens hangs from neck cord and rests against chest, leaving hands free to do hand work.

[viii] **Eye Loupe :** A favourite with watch makers and jewellery. Using precision acrylic lens the unit is very light and can be held comfortably in eye sockets. It is also available with adapter for use with spectacles. It can be put on and takes off easily.

[ix] **Head Loupe :** Mounted on a comfortable handband, it can be flipped up when not in use. As both eyes are used this magnifier provides 3D vision enabling fine manual coordination. The lenses have built in prisms that eliminate squinting

and eyestrain. It can be worn over spetacles also. It is best suited for any kind of detail work where both hands are required to be free to attend to his/her work.

[x] **Flashlight Magnifier :** Ivory light hood rests on printed material keeping focal distance steady.

[xi] **Fresner Wallet Magnifier :** Slim, extremely light weight and visiting card size, it fits easily into pocket or purse. A ready at hand magnifier for reading fine print in dictionaries, menu cards, instructions on medicine bottles etc.

[xii] **Pocket Magnifier :** A general purpose magnifier commonly used as an inspection tool and a reading aid. It is easy to hold and can be used to read a sign or a bus number.

[xiii] **Rayner Recumbent Spectacles :** It has a single prism mounted on a study block plastic frame which requires little adjustment.

[xiv] **Super scan Reading Glasses :** It can be worn over ordinary spectacles.

[xv] **Windsor Spherical Magnifiers :** It is a range of hand-held magnifiers avabilable in 50,76 and 102 mm lens diameter giving 3.0, 2.0, and 1.8 magnification.

[xvi] **Stand Magnifier :** Handy table top magnifier, ideal for magnifying printed matter, films, art works, maps etc. Rests on work susface and leaves both hands free. The stand has side opeings allowing illumination and easy accessibility of tools to the object being viewed. (Lensel Product Catalogue).

[xvii] **Hand-held Magnifier :** Commonly used general purpose magnifiers. There have precision lenses made of optic grade acrylic. The lenses are break-resistance and much lighter than equivalent glass lenses, hence more convenient to use.

Manufacture : Lensel Optics Pvt. Ltd.

66/2, D2, Mide Chinchwad

Pune–411019

4.5.4.3. Modern High-Tech Appliances :

The impact of mordern technology, which is volatile and ever-changing, is yet to be experienced by a majority of the visually impaired in India. At times the changes are so rapid. That is is really difficult to keep pace with them. High-tech

aids are now available–Though at a high cost, even exorbitant in certain cases. But these devices have significent impact on education and employment of the visually impaired.

[i] **Digital Tapelers Recorder :** Yeoksam-Dong, Kangnam-Ku, Seoul, Korea has developed Digital Tapeless Recorder (Check-back) for the blind. The blind people can use it alone without someone's help. It has a special voice prompt for the blind which includes a voice guide, easy research mode, volume adjustment and option for use of earphone.

[ii] **Kurzweil Reading Machine :** A portable optical scanner that reads type-set or type-written text and turns into speech. Its features include : (a) a large memory to provide improve processing of incoming text; (b) an automatic contrast control; (c) tools for format analysis; (d) multi-lingual capability for textinary of these verbal languages; (e) communication interface which allows it to serve as an input or output device with other data or text processing equipment.

[iii] **Optacon :** It is book-sized electronic device with a movable camera, the size of a pocket knife and a tactile screen the size of a finger tip which presents a tactile image on an array of vibratory pins. The reader passes the camera over printed material with his/her right hand and his/her left index finger feels in vibratory relief. The image the camera sees. The manufacturer claims that an experienced optacon user reads upto 90 words per minute, about half his/her Braille reading speed.

[iv] **Braille Computers :**

- **Braille Window** is the Braille-display for connection to all sorts of IBM compatiable personal computers.
- **Key tone** is a portable information handling, word-processor and computer acces device that takes to its user.
- **EHG-BW/2-PIEZO** is a monitor and keyboard which provides out-put in raised dots and can be conveniently used by the visually imparied persons.
- **Galaxy Piezo** is a special computer for the visually imparied and it gives output in embossed dots.
- **Galaxy Speech** is a special computer for the visually impaired with speech output.

● **Brille'n Speak** is pocket size note taker. It can be used for word processing, as a calculator, as a clock and a calendar. It can store 200 pages of Braille text.

● **Versa-Braille II+** is recognised as a convenient Braille operating system. It can be used for editing, programming and word processing. The input is from sixkeys and output is in the form of raised dots. It is a product of Telesensory Systemot Inc.

● **Index Braille** Index Braille is a Sweden based privately owned business with a mission devoted to development and production of Braille Embosser.

The company has introduced Double-sided Braille Embosser, popularly known as "Index Everest". It has a high speed Interpoint Braille Embosser which uses normal cut sheet. Over the years, The Everest has proved to be one of the most reliable Embossers on the market.

● **Speech Synthesizeers** A speech system converts text from a computer into spoken words. It is the hardware device that does the speaking in a speech acces system.

(a) **External device :** It connects to a computer externally and comes with a speaker and a socket for head phones and can be moved around to different machines.

(b) **Internal device :** It comes as a chip or circuits board that must be inserted inside the computer with-sockets for speakers and headphones. It can be moved around to different machines, it works faster than an external device.

(c) **Soft-ware based device :** It is loaded as software on a compateble computer and it gives speech out through the sound system of the computer itself. The Microsoft voice is useful for reading the documents and for operating window commands with the help of multimedia kit. Important features of synthesizers include.

● voice quality; ● speed at which text is converted to speech; ● memory requirements; and ● compatibility of the synthesizer to the computer (Mac or Pc) and ● the number of language available.

(d) **Language Software :** The Indian Institude of Technology (IIT) Chennai has developed Braille Software as well as language software which enables a visually impaired person to access compulters for Braille as well as language outputs in all

the Indian Languages. The Vidya Vriksha Training Centre for the disabled, a Chennai based NGO is imparting training to visually impaired persons in the use of software. It is also providing the software completely free of cost to the users and institutions. It has also developed a system of key board mapping and operations in Indian languages and instruction manual for use of the special version of the ITI multi lingual software.

Computers provide a rich and diverse bearing in the lives of the visually impaired. No device in the journey of time can boast a better feat. Every day new devices are coming up. Interested teacher-learners can have more knowledge from web-site and e-mail.

[i] **ASAP for windows :** web-site : http://www.screenaccess.com

[ii] **Hal :** e-mail : sales @ dolphinaccess.com

(or) support @ dolphinaccess.com

Internet : http://www.dolpinaccess.com

[iii] **JAWS For windows (JFW) :** e-mail : info @ hj.com

Internet : http//www.hj.com

ft : ftp://ftp.hj.com/pub/hj

[iv] **Out Spoken for windows V.1.2 :** e-mail : osw@aagi.com

Internet : http://www.aagi.com

[v] **SLIM WARE Window Bridge :** e-mail : help@synthavoice.on.ca

Internet : http ://www.synthavoice.on.ca

(or) ftp.synthavoice.on.ca

[vi] **Window-Eyes :** e-mail : support@gwmicro.com

Internet : http ://www.gwmicro.com

ftp : ftp.gwmicro.com

- Name of some more companies :

[i] Aicom Corporation : Fax : (408) 577-0373

[ii] Arkenstone, Inc : web:http://www.arkenstone.org

[iii] Artic Technologies : web:http://www.artictech.com

[iv] Balzie Engineering : web:http://www.blazie.com

[v] Digital Equipment Corporation : Phoen–(800) 344-4825

[vi] Dolphin Computer Access Ltd : e-mail:sales@dolphinusa.com
web:http://www.dolphinusa.com

[vii] Duxbury Sytems Inc : Phone (978) 486-9766

[viii] Enabling Technology Company : e-mail:enabling@brailler.com
web:http://www.braille.com

[ix] G W Micro : web:http://www.gw micro.com

[x] Human ware Inc : web:http://www.humanware.com

[xi] Kurzweil Educational Systems, Inc : e-mail:info@kurzweiledu.com

[xii] Pulse Data Informational Limited : e-mail:sales@pulsedata.com
web:http://www.pulsedata.co.nz

[xiii] R C Systems Inc : Fax (206) 355-1098

[xiv] Telesensory System, Inc : Phone: (408) 616-8700 or (800) 227-8418
e-mail:tele@netcom.com
web:http://www.telesensory.com/index.html

Indian Sources of Availability of Devices :

Therform machine : (i) Asian Power Cyclopes
Rochipura, P.O.: Majra, Dehradun–248171
(ii) Advance Engineering works
22, Lytton Road, Dehradun.

- Brailler : (i) North Trust
  48, New Thiruvalam Road, Katpadi–632007, Tamil Nadu
  e-mail : worth@md 3vsnl. net.in
- Braille, Arithmetic, Mobility, Recreational & other devices.

(i) National Institute for the visually Handicaped.
116 Rajpur Road, Dehradun–248001, Uttarkhand.
e-mail:nivhddn@ndc.vsnl.net.in

(ii) National Rehabilitation Engineering Intitute
Blind People's Association, Vastrapur, Ahmedabad
Pin–380015, e-mail:bpa@vsnl.com
web:http://www.education.vsnl.com/bpa_ahmedabad

(iii) Asian Power Cyclopes

(iv) Advance Engineering

(v) Sparsh Products, 151–5, Rajpur Road, Dheradun–248001
Uttarakhand, e-mail:rectarao@de 13.vsnl.net.in

(vi) Voltas Ltd, Kaybee cell, Volkart Building
19 J N Heredia Masg, Ballard Estate, Mumbai–400038

(vii) Artificial Limbs Manufacturing Corporation
G. T. Road, Kanpur–2080116, Uttar Pradesh.

(viii) NAB Louis Braille Memorial Research Center
Rustom Alpaiwala Complex
124, Cotton Depot, Cotton Green, Mumbai–400033.

- Geography & Science Appliances :

(i) V. R. Vardhman International, Vardharman House
1. Raj Block Naveen Shahadara, New Delhi–110032

(ii) Bharat Educational Stores, Chippi Tank, Meerut, Uttar Pradesh.

(iii) Krishna Models Manufacturing Co. Ltd., Nai Sarak,
Near Chandni Chowk, New Delhi–110015

(iv) Bharat Graphics, 194, Industrial Area, Phase–II Chandigarh–160002

- Clock & Watches : (i) HES Limited, Patel Estate, Jogeshwari (West), Mumbai–400102

(ii) Hindustan Machine & Tools Ltd. Watch Mrketing Division
26/1, Levelle Road, Bangalore–560001

(iii) ALIMCO, Kanpur

- Recreational : (i) Pneumatic Controls, 35-B, Rama Road. New Delhi–110015

(ii) Pinball Manufacturing Co.
147, GIDC Makapura Industrial Estate, Vadodara

(iii) Latha Industries, 89/1, Triplicane High Road. Triplicane, Chennai–600005

- Indian Suppliers of Imported Appliances :

(i) Karishma Enterprizes, Shop No. 140, Opp. Mariyamma Temple Jesmine Mill Road, Dharavi, Mahim (East), Mumbai–400017

(ii) Sparsh Products, 151–5, Rajpur Road, Dehradun–248001, Uttrakhand,
e-mail : reetarao@de 13.vsnl.net.in

2.5.5. Let us Sum up :

Education of children with disabilites requries special equiments and TLM. Braille ruler, protector and special compass can enable a blind child to draw any diagram in geomety. Low vision children require magnification. In the case of blind child, Braille state/writing frame, Taylor/Arithemetic Board/Frame are essentials. Teachers-students having keen interest, tenacity and inquisitiveness can impart lessons to visually impaired learners with the objects easily available at hand using sas TLM. Sometimes they can also make low-cost or no-cost equipments by themselves for this purpose.

2.5.6 "Check Your Progress" :

(i) Name the low-tech indispensable equipments to teach the children with visual impairment.

(ii) Suggest how you can prepare TLM from locally available materials for teaching children with usual impairment.

(iii) Briefly describe when and where to use particular types of equipments.

- **Activity :**

  Go to 3/4 visually impaired students studying either in special school or in inclusive set-up to observe his/her special equipments and techniques of their use.

2.5.7 Check Yourself :

Tick the most appropriae answer :

(i) Type is used by the visually impaired students to—

(a) write braille

(b) read braille

(c) do arithmetic

(d) none of the above

(ii) Top-side braille writing is possible by—

(a) inter-line braille slate

(b) inter-point braille frame

(c) pocket frame

(d) braille

(iii) JAWS for he use of visually impaired is a—

(a) software

(b) mathematical device

(c) money identifying device

(d) duplicating machine

(iv) Braille writing by right and reading by left is done on—

(a) inter-point frame

(b) perkins brailler

(c) worth-trust brailler

(d) stensby braille writes

(v) Optacon is a—

(a) braille writing machine

(b) brailled duplicating machine

(c) mobility device

(d) ink-book reading machine

(vi) Sonic guide is a—

(a) braille writing apparatus

(b) mobility apparatus

(c) braille reading apparatus

(d) type of watch.

- **Answer Key :** (i) c, (ii) d, (iii) a, (iv) a, (v) d, (vi) b.

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Unit-3 □ Hearing Impairment : Nature & Classification

Unit-3.1 □ Types of sensory impairments: Single (Hearing Impairment & Visual Impairment) & Dual sensory impairment (Deaf-Blindness)

Structure

3.1.1 Introduction

It is very interesting to know that 90% of the information about the world around us comes from our sight and hearing. We talk to each other, we read our bills, news papers and books, we see T.V., listen to the radio etc.

Medically there are four senses, viz., visual, auditory, gustatory and olfactory, which give special information about the environment; hence these are named as special senses. For example, visual sensation not only gives us the sensation of light but we extract much information from the scenery, e.g. soothing or repulsive, hostile or friendly and so on.

Every man has to right live independently. But some people live independently with some major impairment. This impairment varies in nature. Some are related to vision; some are auditory; mental and physical impairments are also to be counted in this nature.

3.1.2 Objectives

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

- understand the meaning of sensory disabilities
- know about the different aspects of hearing impairment
- know about the different aspects of visual impairment
- know about the different aspects of deaf- blindness

3.1.3 What is sensory impairment?

Going to details sensory impairment, we must know about two things. (1) The sensory system and (2) Receptors.

(1) The sensory system

This system is responsible for carrying different sensations resulting from stimulation of the sensory receptors by external or internal stimuli. For the purpose of perception, a

sensation is to be carried to the part of CNS (Central Nervous System) called sensorium.

(2) Receptors

The receptors associated with nervous system are called sensory receptors or neural receptors. A sensory receptor can be defined as a biological transducer which can convert (transduct) various forms of energy in action potential (AP) in the sensory nervous to which they are connected.

Medically receptors for special senses are

i) Vision : rods and cones,

ii) Hearing: hair cells,

iii) Taste : tests buds,

iv) Smell: olfactory neurones.

3.1.4 Meaning of sensory impairment

The sensory impairment means the senses that is sight, hearing, smell, touch, taste and spatial awareness, is no longer normal. Mainly the term 'sensory impairment' is used here to refer to people with either visual or hearing impairments or both - the extent of those impairments will vary from person to person. As an example, if a man wears glasses then he/ she has sight impairment, if find it hard to hear or have a hearing aid then call hearing impairment. A person does not have to have full loss of a sense to be sensory impaired.

3.1.5 Types of Sensory Impairment: Single (Hearing impairment & Visual Impairment)

The term sensory impairment encompasses visual loss (including blindness and partial sight), hearing loss (including the whole range) and multisensory impairment (which means having a diagnosed visual and hearing impairment with at least a mild loss in each modality or deaf blindness).In this context it is said that sensory impairment has two types. One is single and another is dual. Hearing impairment & Visual Impairment is under the single sensory impairment and Deaf-blindness is under dual sensory impairment.

3.1.5.1 Hearing impairment (HI)

Hearing is the ability to perceive sound. A person suffering from hearing impairment has difficulty in perceiving or identifying sound clearly due to auditory problems. So it is said that hearing impairment is hearing loss that prevents a person from totally receiving sounds through the ear. The impairment may be unilateral or bilateral. 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.

Meaning of Hearing Impairment

Hearing impairment refers to a defect in or damage to the hearing mechanism. This defect or damage may occur in any part of the ear, outer ear or middle ear or inner ear. Hearing impairment leads to hearing disability or loss of hearing. Hearing disability or loss of hearing may range of severity from mild to moderate to profound. A person may become deaf or hard of hearing depending upon the nature of impairment and the degree of hearing loss.

Classification

The degree of hearing loss can be classified five levels as listed below:

Degree of Hearing Loss	Ability to perceive sound
Mild	Difficult to identify soft sound such as whispering.
Moderate	Unable to hear clearly what others are saying during conversation. Hearing aids are necessary.
Moderately -severe	Unable to clearly hear loud noises such as telephone ring.
Severe	Can only hear very loud noises and sounds such as shouting or vacuum cleaner noise.
Profound	Difficult to perceive any sound.

According to impairment the two main types of hearing loss are:

Conductive hearing loss, which is the most common type and results from interference in the conduction pathways through which sound reaches the inner ear. This hearing loss usually affects the volume of sound reaching the inner ear. People

with conductive hearing loss may benefit from the surgical insertion of grommets or from hearing aids. It is commonly a temporary hearing loss.

Sensorineural hearing loss, which is caused by damage to the hair cells lining the inner ear, or the nerves that supply them. This hearing loss can range from mild to profound, and affects certain frequencies more than others. Consequently, people with sensorineural hearing loss need high quality hearing aids or cochlear implants to gain access to the spoken word and sound in the environment. It is also possible to have a mixed hearing loss, which arises from both the above.

Symptoms of Hearing Impairment

The symptoms of children with hearing impairment are:

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	Do not look at the person being mentioned, e.g . "Where is Papa?"
10-12 months old	No response to their names being called or frequently used words or phrases,e.g."come", "go".

During Childhood

- Delayed response to sound.
- Can not 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
- Give irrelevant answers or misinterpret instructions
- Request for repetition during conversation
- Show poorer ability to understand speech in a noisy environment
- Tend 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 as a result of communication difficulty

Parents should be alert to the possibility of hearing impairment if their child shows the above signs,and seek medical advice as soon as possible.

Causes of Hearing Impairment

Two factors are involved in various causes of hearing impairment. These are Congenital factors and Acquired factors.

Congenital factors mean those factors which are innate by birth. Such as

- Heredity
- Viral infection during pregnancy, e.g. rubella infection
- Congenital defects such as anomalies of the ear ,nose or throat
- Premature birth , birth asphyxia, excessive bilirubin etc.

Acquired factors mean those factors which are acquired after birth. Such as

- Excessive ear wax
- Eardrum perforation
- Middle ear effusion or infection
- Otoclerosis or ear ossicle dislocation
- Sequel of childhood disease such as meningitis
- Head or ear trauma
- Prolonged exposure to loud noise
- Medication that may lead to hearing damage
- Accident.

Above causes of hearing impairment are affecting the children's development in different side. Mainly problem arises in language development. Except this problem

Emotion and behaviour problem, lack of self- confidence, problems of social interaction, academic performance etc.

People who are profoundly deaf can hear nothing at all. In order to communicate spontaneously and rapidly with people, they are totally reliant on lip reading and/or sign language. People who are born deaf and lip-reading much harder to learn compared to those who became hearing impaired after they had learnt to communicate orally (with sounds).

Some diseases or circumstances can cause deafness, including:

Chicken Pox

Cytomegalovirus

Mumps

Meningitis

Sickle cell disease

AIDS- Offspring of mothers who had aids during pregnancy have a much higher risk of being deaf by the age of 16 years.

Syphilis

Lyme disease

Diabetes- Studies have shown that upto 40% of diabetes patients suffer from some kind of hearing loss.

Tuberculosis (TB)-Expert believe that the medication, streptomycin, used to treat TB may be the key risk factor

Hypothyroidism and underactive thyroid gland

Arthritis

Some Cancers

Second hand smoke exposure can increase hearing loss in teenagers

Many people globally have untreated hearing loss

The impact of hearing impairment on the child is determined by a variety of factors. Generally speaking, early treatment and training can help to minimize the developmental problems caused by hearing impairement.

3.1.5.2 Visual impairment (VI)

This term covers varying degrees of vision loss including those who are registered severely sight impaired (blind). Even the latter may have some vision, such as being able to tell the difference between light and dark. There are many conditions that cause different kinds of vision loss; the main distinction between conditions is whether the impairment is ocular (eye) or cerebral (brain).

Visual impairment is considered as the most severe and traumatic physical handicap. Since more impressions are conveyed to the brain through the eyes, the visual anomalies may influence the life of the individual in physical, mental, social, vocational and educational aspects.

Visual impairment (VI) refers to a significant functional loss of vision that cannot be corrected by medication, surgical operation, or ordinary optical lenses such as spectacles.

Meaning of Visual Impairment

It is an interesting phenomenon that visual impairment tends to evoke more awkwardness from us than any other disability. Why are we so uncomfortable about of blindness? For one thing blindness is visible. The blind person is usually not one who can easily weave himself into the fabric of a crowd. Unlike any other exceptional people he stands out. We often don't realize a person has impaired hearing until we talk to him.

There are two prevailing ways of describing visual impairment-the legal definition and the educational definition.

Legal definition of visually impaired—the legal definition involves assessment of visual acquity and field of vision. The American Medical Association (AMA) proposed the definition. This definition is now accepted by the American Foundation for the Blind (AFB) and other Blind Association in different countries.

"A legally blind person is said to be one (1) who has visual acquity20/200 or less in the better eye even with correction, (ii) whose field of vision is so restricted that it subtends an angle of 200 or less in the better eye after correction."

Visually impaired are those who suffer from either of the following conditions (Ministry of Social Welfare 1987) - a) Total absence of sight,

b) Visual acquity not exceeding 6/60 or 20/200(Snellen) in the better eye correction lenses,

c) Limitation of the field of visual subtending an angle of 20 degree or worse.

Within this broad definition, visually impaired children are differentiated into two categories, the blind and the partially seeing or low-visioned.

Educational definition of visually impaired- educationally defined, the blind child is defined as one whose visual loss indicates that he/she should be educated chiefly through the use of Braille and other tactile and auditory materials. The partially seeing child is defined as one who has some remaining useful vision and can use print and other visual materials as part of the educational programme.

Sensory Training and Mobility

In a visually impaired individual, the loss of sight is compensated by sense of touch and hearing. Sense of touch enables the persons to determine his position and direction. Hearing play a dominant role in mobility.

Explorations of an object through touch determine the definiteness of the object and help the individual to form a neat conception of them. Sense of touch also has a lot to do with reading. During his travel the smell of a gutter, the smell of smoke of a chemical industry (like paper factory, sugar factory etc.), smell of kitchen products etc. are source of information for the person to locate where he is, this leads to a greater level of confidence in mobility.

Daily living skills

These are also called as 'survival skills'. These build up confidence specially among visually impaired children. These are necessary for day to day living. Some of the common daily living skills are eating manners using toilet, dressing body hygiene, cleanliness, taking bath, washing cloth, handling money, shopping, shaving, proper use of electrical appliances, food preparation, cleaning of place, using medicine etc. learning daily living skills of a visually impared child are means of his proper social development also. These skills are difficult but not impossible to learn.

Classification

The degree of visual impairment can be classified into three levels:

Mild	• Can read relatively larger characters. • No difficulty in identifying shapes ,colours and brightness contrast
Moderate	• Can tell shapes and colours of objects and can distinguish between brightness and darkness • Can only read characters with larger size and broader strokes
Severe	• Can only distinguish more obvious changes in brightness and darkness • May not see anything(completely blind)

The visually impaired children have been classified medically which are shown in the following table:

Category/ Level	Better Eye	Worse Eye	Percentage of Impairment
Level D	6/9-6/18	6/24-6/36	20%
Category I	6/18-6/36	6/60-nil	40%
Category II	6/60-4/60 or Field of Vision 100-20	3/60-nil	75%
Category III	3/60-1/60 or Field of Vision 100	F.C. at 1 ft. To nil	100%
Category IV	F.C. at 1 ft. To nil or Field of Vision 100	Field of Vision 100	

There are two major categories of visually impaired children :

(i) The partially sighted are those who require large print or magnified print materials. Their visual acquity is very low (20/70 in the better eye).this means that the child sees at 20ft when a normal child sees at 70 ft. Their eyesight may be weak

due to short sightedness, long sightedness, Such astigmatis need , glaucoma or muscle detachment.

(ii) The blind are those who need to be taught through Braille or through aural methods their visual acquity may fall to 2/200.Such children must be prepared in preacademic skills like braille reading and use of cane for mobility before integration.

Symptoms of Visual Impairment

The symptoms of children with visual impairment are:

During infancy:

- Lack of eye contact
- Blinking to bright light
- Do not look at his /her hands
- Do not visually follow moving objects in front of his /her face
- Slow response to voiceless toys or parents' faces; respond only to sound
- No imitation of others' expressions and actions
- Do not actively reach out for his /her favourite toys
- Fear of gross motor activities ,such as crawling

During early childhood

- Often keep his/her head down; lack eye contact with others
- Limited facial expression and body language
- Tend to hold objects very close to the eyes when looking at them
- Abnormal responses to bright to light (gazing at light excessively or trying to avoid it)
- Often bump into objects or fall over , and get confused with directions
- Search for his/her way using hands
- May press on eyeballs with fingers
- Jerky movements of the eyeballs

Causes of Visual Impairment

Loss of vision or impairment of vision is caused due to many reasons. Injury to the eye, inherited conditions, infections etc. are the main common causes that lead to vision loss or visual impairment. Generally causes of Visually Impairment are divided into two parts. One depends on systematic conditions and another is specific eye conditions.

SYSTEMIC CONDITIONS

- Diabetes
- Hypertension (high blood pressure)
- Cerebrovascular (brain blood vessel) disease or stroke
- Atherosclerotic disease (cholesterol deposits in blood vessels, including those of the eye)
- Human immunodeficiency virus (HIV) usually due to infection with cytomegalovirus, a virus that affects the eye
- Vitamin A deficiency
- Infections involving the eyes

Some eye infections, including those caused by parasites, are more common in developing countries. Infections in a pregnant woman can affect the foetus. This type of vision loss, present from birth, is called congenital blindness.

SPECIFIC EYE CONDITIONS

- Macular degeneration-deterioration of the central part of the retina
- Cataracts-clouding of the lens of the eye
- Glaucoma-damage to the nerve connecting the eye to the brain caused by increased pressure inside the eye
- Eye injuries
- Tumours involving the eye or surrounding structures in the head and neck

Now some causes of visual impairment are discussed briefly

Injury to the eyes

- Eye injury may happen while playing or at work or due to accidents which may result in vision loss and impairment.

- The commonest cause of vision loss is injuries to the cornea.

Inherited conditions of blindness and vision impairment

- The most common cause of inherited blindness is retinitis pigmentosa.

Infections of the eyes

- The baby may be born with blindness or visual impairment if the mother has had a viral infection like German measles that is transmitted from the mother to the developing foetus during pregnancy.
- Trachoma of the eyes caused by contagious microorganism called *Chlamydia trachomatis* may also damage eye sight. This is seen in the developing and underdeveloped countries with poor water and sanitation facilities.

Amblyopia

- Generally Amblyopia means impaired vision in one eye due to lack of its use in early childhood.
- It is seen in squint or "lazy eye" since both the eyes project differently and send in different messages to the brain the brain may then turn off or suppress images from the weaker eye.This stops development of the weaker eye leading to amblyopia in that eye.

Cataract

- Cataract means clouding of part or the entire lens of the eye.
- Normally, the lens is clear to let in the light that focuses on the retina. Cataracts prevent light from easily passing through the lens, and this causes loss of vision.
- Due to cataract cloudy or blurry vision, difficulty in seeing in dimly lit areas and bright lights, colours appear faded, double vision etc. happen. This condition usually affects the elderly.
- Cataract is the leading cause of blindness in the world compared to other eye disorders.

Diabetic retinopathy

- The small blood vessels in the retina are affected due to diabetes for which impairment of vision is caused.

- This is the commonest cause of blindness and visual impairment in the United States.

Glaucoma

- Raised pressure within the eyes is caused due to Glaucoma. The increased pressure impairs vision by damaging the optic nerve.
- This may be seen in older adults and in some babies as well who are born with the condition.

Age related Macular Degeneration

- The progressive loss of the visual acuity due to damage to the macula that is the most sensitive part of the retina is called Age related Macular Degeneration or AMD.
- Due to AMD the center of the visual field appears blurry or opaque. The patient is unable to focus clearly. This mainly occurs in the elderly.
- Those who are exposed to excess sunlight and those who smoke excessively may suffer from AMD.

AIDS related visual impairment

- Viral infections of the eyes called Cytomegalovirus or CMV retinitis may cause AIDS related visual impairment.

Cancer of the eyes

- The most common eye cancer of children is called Retinoblastoma.

3.1.5.3 Dual Sensory Impairment (Deaf-Blindness)

Meaning of dual sensory impairment

It is the combination of both hearing and sight impairment. It is not necessarily a total loss of both senses - indeed the majority of dual sensory impaired people do have some degree of sight and/or hearing. Those with a less severe degree of both sight and hearing impairment may also be referred to as having a dual sensory impairment or loss. The words dual sensory impaired and deaf-blind are generally accepted as inter-changeable words.

When a person has difficulties seeing and hearing then the person can be termed deaf-blind. Although it is more common to refer to someone as being deaf-blind if their combined sight and hearing loss causes difficulties for them with communication, mobility and access to information.

The combination of the two sensory impairments intensify the impact of each other, which usually means that a deaf-blind person will have difficulty, or find it impossible, to utilise and benefit fully from services for deaf people or services for blind people. Meeting the needs of deaf-blind people therefore requires a separate approach.

Deaf-blindness is a unique and extremely complex disability that often requires specialist communication methods and and systems being introduced to the person and those around them to enable communication to take place.

Deaf-blindness has adverse effects on all areas of development, in particular the language acquisition process, conceptual development, motor development, behaviour and personality of a person.

People who are deaf-blind can generally be separated into two groups:

Congenital Deaf -blindness - People who were born with a hearing and vision impairment.

This category may also include individuals who are born hearing - sighted, but who become deaf-blind through accident or illness within the first months of their lives. The important factor being that they become deaf-blind before they had the opportunity to gain formal language skills.

Acquired Deaf-blindness - People who develop deaf-blindness later in life.

Three combinations are possible :

a) Individuals who are born blind and later develop a hearing impairment.

b) Individuals who are born deaf and later develop vision impairment.

c) Individuals who are born sighted and hearing, but later develop a vision and hearing impairment.

Every deaf -blind person is an individual and may not fit neatly into any of the above categories, or use the suggested means of communication. Their situation may be complicated by the existence of other factors such as physical and/or learning disabilities etc.

Symptoms of deafblindness

Levels of hearing and sight loss vary between individuals who are deafblind.

Hearing loss

In deafblindness, hearing loss can occur from birth or may develop later after an infection or injury. In other cases, a person's hearing may gradually deteriorate over time.

Someone with impaired hearing may find that speech and other noises sound muffled and indistinct and they may not be able to follow and understand conversations, particularly when there's background noise.

A person with a hearing problem may also need to turn up the volume on the television or radio and ask others to speak loudly, slowly and more clearly.

Sight loss

A person who is deafblind may have developed a condition that gradually causes their vision to deteriorate. For example, they may have an eye condition such as:

- cataracts - cloudy patches that form on the eye's lens
- glaucoma - pressure changes inside the eye that damage the optic nerve (the nerve that transmits images from the eye to the brain)
- retinopathy - a number of eye disorders that damage the blood vessels of the retina (light-sensitive tissue at the back of the eye) and can lead to vision loss

Common symptoms of conditions that cause progressive sight loss include:

- eye pain
- blurred vision
- halos around light sources
- reduced night vision
- difficulty seeing in bright sunlight or well-lit rooms

Causes of Deaf-Blindness

There are many causes of deaf-blindness. Those that are present or occur around the time a child is born include prematurity, childbirth complications, and numerous congenital syndromes, many of which are quite rare. Deaf-blindness may also occur

later in childhood or during adulthood due to causes such as meningitis, brain injury, or inherited conditions.

Congenital deafblindness is when people are born deafblind.

Some people become deafblind later in life and this is called acquired deafblindness.

Many people who are deafblind have rare and varied causes of their sight and hearing loss. They may experience other disabilities and health conditions, meaning that diagnosis and the identification of sight and hearing loss are difficult.

Causes of deafblindness include:

- Infections during pregnancy
- Prematurity
- Rare syndromes, such as Usher and CHARGE
- Illness and accidents
- Sensory loss in old age

Many children with profound and multiple learning disabilities will experience limited communication skills and impairments of vision and hearing.

Congenital rubella syndrome is no longer a significant cause of deafblindness, but other infections during pregnancy are a factor, for example cytomegalovirus and toxoplasmosis.

One in ten babies born prematurely will develop a permanent disability such as cerebral palsy, blindness, deafness or lung disease, or a combination of these.

Illness and accidents can lead to sensory loss in children and adults, and a number of conditions lead to a loss of sight and / or hearing over time.

Sensory loss is just one more effect of old age. A hearing and vision loss may have crept up slowly on a person, so they only gradually realise something is wrong. As a result the everyday difficulties a person describes are not just to do with ageing but are the typical effects of deafblindness.

Below is a list of potential causes of deafblindness with links to websites containing additional information.

Please note that the information on these pages is for information purposes only. It should never be used for diagnostic or treatment purposes.

If you have questions regarding a medical condition, always seek the advice of your general practitioner or other qualified health professional.

Rubella

Rubella is a mild and preventable disease caused by a virus. If you catch it you may feel unwell, with swollen glands, a slight temperature, or a sore throat and rash.

But some people have no symptoms at all and so are unaware that they may be infectious and may be passing on the disease.

Rubella is very serious if a pregnant woman catches it in the early stages of her pregnancy because it can profoundly damage the development of her unborn child. It can result in deafblindness or raise the possibility of a termination.

Ensuring that children are routinely vaccinated helps to protect pregnant women and their babies.

Congenital rubella syndrome

A baby born affected by rubella is said to have congenital rubella syndrome (CRS). Many will have hearing loss, cataracts, other eye conditions, and heart problems that require significant hospital treatment and will affect the child throughout their life. A baby's brain can also be affected.

The risk of congenital rubella syndrome affecting the baby and the extent of the birth impairments it causes depends on how early in the pregnancy the mother is infected. The earlier in the pregnancy the greater the risks.

German measles is a common term used to describe rubella.

3.1.6 Let us sum up

90% of the information about the world around us comes from sight and hearing. Medically there are four senses, viz. visual, auditory, gustatory and olfactory, which give special information about the environment; hence these are named as special senses. Some people live with some major impairment which is related to vision, auditory, mental & physical. Sensory impairment has two types- Single & Dual. Hearing and visual impairment is under single sensory impairment and deaf-blindness is under dual

sensory impairment. A person suffering from hearing impairment has difficulty in perceiving or identifying sound clearly due to auditory problems which prevent a person from receiving sounds through ear. Visual impairment is considered as the most severe and traumatic physical handicap and it may influence the life of an individual in physical, mental, social, vocational and educational aspects. Dual sensory impairment is the combination of both hearing and sight impairment (Deaf-Blindness).

3.1.7 "Check your progress"

Q.1. What are the two types of sensory impairment?

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Q.2. Which type of impairment comes under single sensory impairment?

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Q.3. What do you mean by Congenital Factors for causing Hearing Impairment?

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Q.4. What are the two conditions that cause visual impairment?

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Q.5. Write the name of two diseases which affect all types of sensory impairment?

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3.2 □ Importance of hearing

Structure

3.2.1 Introduction

"Blindness separates people from things. Deafness separates people from people." There is no better way to describe why hearing is of such great importance in our lives than the words of the philosopher Immanuel Kant. Hearing helps us to establish contact with other people, holding an intimate conversation or simply laughing together - hearing means communication and is an irreplaceable component of our social lives. An unborn child already picks up sounds, voices, and even music.

Hearing is used round the clock. It is key to communication and hence to social interaction. The ear is man's most efficient but also most sensitive sensory organ. However, proper importance is not given to it by our modern, visually-oriented world.

Considering the importance of hearing to one's career, interpersonal relationships, achievement, and safety, it is not surprising to find that the costs of hearing loss are

widespread and grave. Readiness is disrupted by noise-induced hearing loss and result in decreased effiency.

For service member, hearing is considered as the most important survival sense. Sound is often the first source of information a warrior has before direct contact with the enemy. As such, hearing is vital for both lethality and survivability. In the military, hearing is fundamental to the instruction, teamwork and reporting skills that are necessary for mission accomplishment. Moreover, hearing is essential for forging relationships and connections with friends and family, fully participating in team and community activities, and experiencing life events.

3.2.2 Objectives

After going through this subunit the learners will be able to

- know about the importance of hearing
- understand the effect of hearing in living
- know about the process of hearing
- know about the impacts of hearing loss

3.2.3 Why is hearing important?

Hearing empowers us and enriches our lives. Hearing enables us to socialise, work, interact, communicate and even relax. Good hearing also helps to keep us safe, warning us of potential danger or alerting us to someone else's distress.

Hearing is very much important for us to be able to live and participate in life more effectively. Hearing problems may lead to feelings of isolation and even depression. Our hearing provides us with an enormous source of information, which forms the bridge between the worlds and how we interact with it.

The ability to hear is an integral part of our lives. The importance of good hearing and the consequences of hearing loss are still underestimated. Due to the demographic aging of our society and the growing noise pollution in our environment, the number of people affected by hearing loss continues to rise.

3.2.4 What are the consequences of hearing loss?

Serious consequences are often faced by the people with untreated hearing loss. These range from disadvantages at work, relationship problems and social isolation, which may even lead to depression. Since the development of speech and language of children is fundamentally dependent on the sense of hearing, the consequences are severe for the children with an untreated hearing loss.

3.2.5 Effect of Hearing in living

Every part of our life is influenced by hearing. Hearing accompanies us throughout our life. Hearing enables us to communicate with others. Sounds are there with us in our daily life - some relax us, others cause stress. Much of what we hear we enjoy. There are everyday sounds we no longer even notice, and other noises we would rather just avoid. Our ears help us to communicate with other people, to listen to music or make music ourselves.

Our hearing is partly responsible for how well we sleep at night. The quality of our hearing also affects our personal relationships and happiness in our partnerships.

Two important things of hearing in living

The first important thing is that so many areas of our everyday life are influenced by hearing. that improved hearing has one benefit above all others: enhanced quality of life. Better hearing means better communication - in our relationships with our partners, as well as toward friends and family. Good hearing is not merely of benefit to ourselves : its positive effects are also directly measurable among family, relatives and partners.

The second important thing is that we are able to experience life in a more active, healthier way, and with fewer restrictions with better hearing. Stress is reduced, or may be avoided in the first place, concentration is improved, and relaxation is easier. Moreover good hearing also contributes to enhanced personal wellbeing and general health.

Healthy hearing allows us to communicate. to socialize with friends, to alert us trouble and work more effectively. Healthy hearing even helps us to relax.

So when our hearing declines which happens for most people at some point -it can feel like much of our life is going downhill. The fact is, hearing loss doesn't just affect us physically. It can impact our emotional and social health, too.

Left untreated, hearing loss is often related to:

- Negative attitudes, anger and irritability
- Stress, fatigue anred tension
- Depression
- Loneliness
- Desire to avoid social scenes
- Unsafe situations due to decreased alertness
- Lower job performance
- Trouble remembering things or following directions

Many people chalk these symptoms up to old age. But in truth, hearing loss occurs in every age group. It's especially important to catch hearing loss in children since hearing is so essential to language development and hearing skills. But adults young and old also need to watch for signs of hearing loss so that they can make the most of their quality of life.

Hearing helps us to lead our everyday lives without limitations.

3.2.6 Everyday situations that can be affected by hearing loss

Hearing is important...

... at work

- Participating in group meetings.
- Talking on the telephone.
- Following a conversation in a busy office.

... at social occasions

- Chatting to friends.
- Participating in dinner conversation at a restaurant.
- Interacting with grandchildren.
- Talking on the telephone.
- Watching TV together with others.

... for our own safety

- When walking near busy roads.
- To be able to hear sounds that alert us to danger like sirens and other traffic signals.
- So we can be alert to a cry for help.

... when we learn

- Allowing us to maintain a high level of concentration with little effort.
- So we are able to communicate with instructors.
- So we are able to register information accurately.

3.2.7 How hearing works

The ear, despite its small size, is a highly complex organ. Acting as sound filter, the ear transforms every sound audible to us into accurate information the brain can prioritise.

Each ear consists of delicate and highly complex mechanisms. In "the inner" ear, a sea of tiny sensory cells and nerve fibres pick up sound vibrations and transform them into electrical impulses for the brain to process.

The sensory cells and fibres can become damaged if the ear is exposed to strong vibrations over time. If these are unable to heal or be replaced, this can lead to permanent hearing loss.

Hearing works in six steps. These are

1. Sound funnels into the ear canal and causes the eardrum to move.
2. The eardrum vibrates with sound.
3. Sound vibrations move through the ossicles to the cochlea.
4. Sound vibrations cause the fluid in the cochlea to move.
5. Fluid movement causes the hair cells to bend. Hair cells create neural signals which are picked up by the auditory nerve. Hair cells at one end of the cochlea send low pitch sound information and hair cells at the other end send high pitch sound information.
6. The auditory nerve sends signals to the brain where they are interpreted as sounds.

3.2.8 Anatomy of the ear

The ear is made up of three parts:

- the outer ear (the external ear and the ear canal)
- the middle ear (the ear drum and three very small bones)
- the inner ear (the cochlea and auditory nerve)
- Sound travels through the air in waves resulting in a series of vibrations within the ear. The brain then interprets those signals into meaningful sounds such as speech.

Our ears are small but highly complex amplifiers.

OUTER EAR

At the end of the ear canal, the sound waves hit the ear drum. The ear drum is a thin membrane between the outer ear and middle ear.

MIDDLE EAR

The ear drum is connected directly to the hammer. The three tiny bones - hammer, anvil and stapes-are the smallest bones in human body, and transmit the mechanical vibrations of the ear drum into the inner ear.

INNER EAR

The stapes transmits the vibrations via the oral window to the inner ear. In this way, the sound waves arrive in the cochlea, which is filled with fluid.

3.2.9 Hearing Loss Impacts:

Health:

Hearing loss has been linked to feelings of social isolation, depression, and chronic disease.

Safety:

Hearing loss can cause threat so far as safety of our service members is considered since it diminishes their ability to send, receive, and respond to commands and warning signals and can result in the misinterpretation, or miscommunication, of critical information.

Quality of Life :

Hearing helps us to enjoy our life fully which helps to shape the quality of our life. The impact of hearing loss for our military personnel is not only significant on the battlefield but also at home and in their interpersonal lives. It still impedes one's ability to participate in and experience many of life's cherished moments, such as hearing a loved one's voice or laughter, participating in meaningful conversations with friends and family, hearing birds chirping or waves crashing on the beach, or enjoying one's favorite shows or sports on TV.

Mission accomplishment :

For effective operational planning and execution communication is a must. Hearing loss can disrupt communication and therefore substantially impede a service member's ability to carry out his or her mission. Miscommunication or misinterpretation of a command/order/ instruction, may happen due to hearing loss which can have dire consequences for the service member and the unit at large.

Hearing loss also contributes to a hefty economic toll. In addition to the indirect and direct costs associated with veteran compensation for hearing loss and related injuries, which accounts for billions of dollars annually, these injuries also result in expenses in the form of decreased productivity, loss of qualified service members, and recruitment and retraining costs.

3.2.10 Tips for parents

Of babies with hearing loss

- Above all, babies with hearing loss need exactly the same as all children: the love, patience and attention of their parents.
- Even when their baby is still an infant, parents should try to maintain eye contact when speaking to them. Their facial expressions and gestures should match what they are saying.
- Hearing loss in your baby should not be a taboo subject: if it is spoken about openly from early on, it is easier for the parents, and later also the child, to treat it as something natural.

When children learn to speak

- Parents should treat their children as normally as possible.

- Parents should speak as clearly as possible, maintain eye contact with their child when speaking, and teach their child to always look at the person talking to them. If the child does not understand everything they say, they should repeat what they said using different words.
- Even at a very young age, children should be encouraged to ask if there is anything they have not understood correctly.
- Parents should make sure that background noise is kept to a minimum when speaking to their child.
- If parents read picture books to young children, they should bring the pictures to life with sounds as well as reading the text provided (e.g., imitating animal noises). This will enable children to imitate sounds and learn from an early stage how to participate verbally in communal reading.

How to successfully master school life

- Parents should get to the bottom of unusual behaviour at school or concentration difficulties as soon as possible: hearing loss could be the cause.
- If opting for a mainstream school, a few points should first be clarified with the classroom teacher: the student in question should sit as close to the front as possible (for better comprehension / lip reading where applicable) and the teacher should use an FM/Roger system.
- Speech or music therapy can also provide additional support for the child. As well as enhancing the child's verbal and communication skills, this can also promote reading and writing skills.

3.2.11 Let us Sum up

Blindness separates people from things and deafness separates people from people. Hearing means communication & is an important component of our social lives. The ear is man's most efficient & sensitive sensory organ. If we consider the importance of one's career, interpersonal relationships, achievement & safety, it is not surprising to find the costs of hearing loss are widespread & grave. Operational effectiveness is decreased due to Noise Induced Hearing Loss. Sound is often the source of information a warrior has before direct contact with enemy. As such, hearing is very vital for lethality & survivality. Hearing enables us to socialise, work, interact, communicate & even relax. Safety of an individual as well as other depends on good hearing capacity. Problems

of hearing may lead to feeling of isolation & even depression. If treatment is not done for hearing loss, people may face with serious consequences like disadvantages at work, relationship problem, social problem which may lead to depression. There are two important things of hearing in living. Firstly, better hearing means better communication effects in relationship with partners, friends and family. Secondly, better hearing helps us to reduce stress, improve concentration and easy relaxation. On the other hand, effect of hearing loss is observed in our emotional & social life. Hearing helps us lead our everyday life without limitations. Impact of hearing loss is observed at work, at social occasions, safety on road & workplace and in learning practices. Our ear consists of three parts - Outer ear, Middle ear & Inner ear. Sound travels through the air in waves resulting in a sense of vibration within the ear. The brain then interprets those signals into meaningful sounds such as speech.Care is required to be taken for the children having hearing loss problem since the development of speech and language of children is fundamentally dependent on sense of hearing.

3.2.12 "Check your progress"

Q.1 In which areas of one's career is hearing important?

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Q.2 How many steps are involved in hearing process?

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Q.3 How many parts are there in the ear?

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Q.4 Write the name of three tiny bones of middle ear.

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Q.5 Write one of the important things of hearing in living.

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3.3 □ Process of hearing & its impediment leading to different types of hearing loss

Structure

3.3.1. Introduction

Hearing comes first and then speaking. Learning process of most students starts with

their hearing. One of the earliest link infants develop is between what they hear and what they see. Our speaking vocabularies depend on our hearing vocabularies (the words we understand). Hearing enables us to know more than we can say. Language acquisition and the knowledge of the world that comes with it are naturally occurring process for all students.

Deaf or hearing impaired students experience their world in a markedly different way than do their hearing peers. Without early and special help they may not acquire spoken language. For effective education and socialization speech and language are critical avenues in our society. Hearing impaired students may be cut off this processes and become isolated unless early identification is done and helped to compensate for their hearing loss by undergoing corrective medical treatment or learning to use amplification, normal ways of receiving and expressing language, or various types of assistive devices.

So, it is very much important to know the process of hearing, types of hearing loss and its impediments leading to different types of hearing loss if we want to know regarding hearing impairment.

3.3.2 Objectives

After going through this subunit the learners will be able to

- know about the Process of hearing
- know the different parts of the Ear
- state the functions of the Ear
- know about the types of hearing loss

3.3.3 Process of Hearing

Through our organ- Ear, we are able to acquire hearing, auditory perception, or audition to perceive sound by detecting vibrations, changes in the pressure of the surrounding medium through time, we may hear sound through solid, liquid, or gaseous matter. It is one of the traditional five senses; partial or total inability to hear is called hearing loss.

For humans and other vertebrates, hearing is performed primarily by the auditory system. Vibrations (mechanical waves,) are detected by the ear and transduced into

nerve impulses which are perceived by the brain (primarily in the temporal lobe). Like touch, audition requires sensitivity to the movement of molecules in the world outside the organism. Both hearing and touch are types of mechanosensation.

During hearing, sound waves enter the auditory canal and strike the eardrum, causing it to vibrate. The sound waves are concentrated by passing from a relatively large area (the eardrum) through the ossicles to a relatively small opening leading to the inner ear.

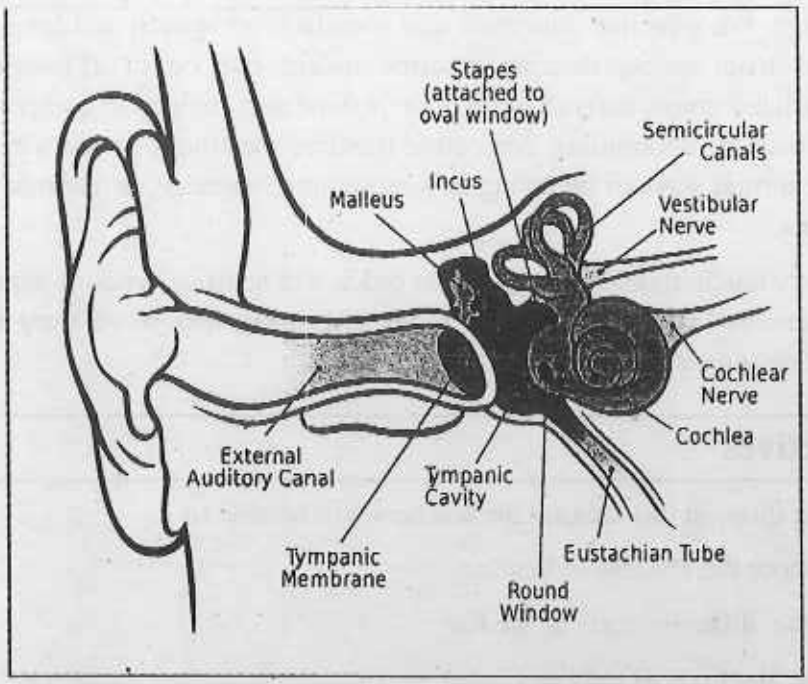


Fig 1

For knowing the hearing process it is necessary to know about the anatomy of the Ear.

Anatomy of the Ear

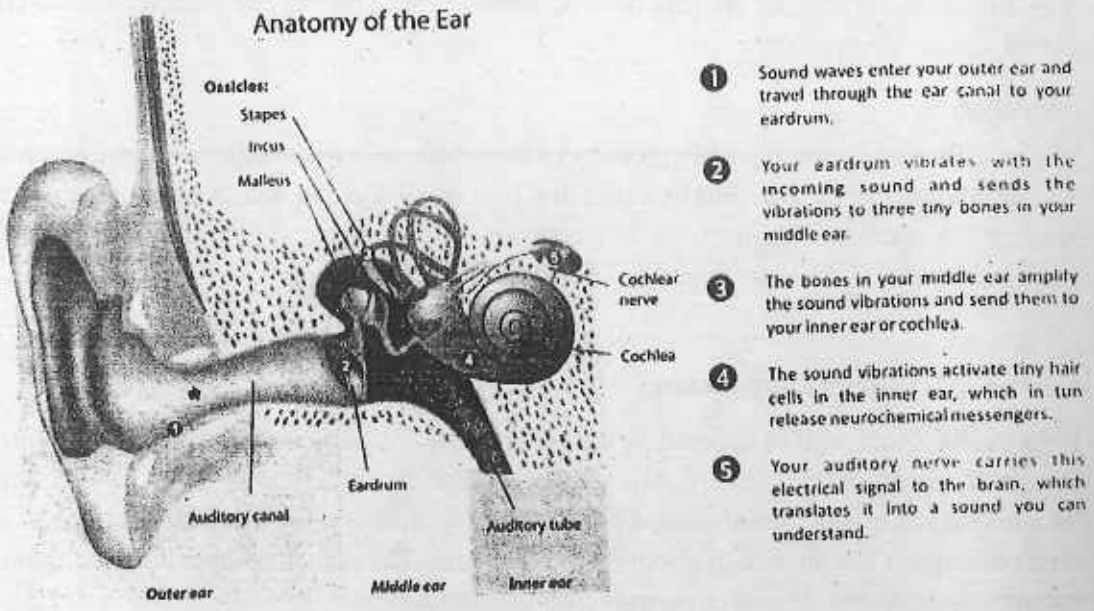
To understand properly about the hearing loss, it is necessary to first understand the anatomy of the ear. The ear has three main parts: the outer ear, the middle ear and the inner ear

External Ear

- Pinna (auricle) - collects and funnels sound into the ear canal
- Ear canal (external auditory meatus) - directs sound into the ear

Middle Ear

- Eardrum (tympanic membrane) - changes sound into vibrations
- Ossicles or Hammer, anvil and stirrup (malleus, incus and stapes) - this chain of three small bones (ossicles) transfers vibrations to the inner ear Inner Ear
- Inner ear (cochlea) - contains fluid and highly sensitive "hair" cells. These tiny hair-like structures move when stimulated by sound vibrations
- Vestibular system - contains cells that control balance
- Auditory nerve - leads from the cochlea to the brain



External Ear

The external or outer ear is the outer most portion of the ear. It has two parts-

(i) Pinna and (ii) Ear canal.

(i) Pinna (auricle)

The Pinna or Auricle is that part of the ear which we can see from outside. The pinna is of conical shaped structure and is attached to the head, on either side, at an angle of 30 to 40 degree. The various portions of pinna play an important role in human

hearing. The entire pinna or auricle is made up of an elastic cartilaginous structure and it has no bones. The pinna remains live and active due to the blood and nerve supply.

Ear canal (external auditory meatus)

The external auditory Canal/Meatus is "S" shaped tube that opens at the pinna but closed inside by the tympanic membrane or eardrum. The length of an adult auditory canal is about 25 to 40 mm and has a volume of about 2 cc. The outer two third portion of the ear canal is cartilaginous one while the inner one third portions is bony i.e., has bony base. The entire canal is lined with skin and epithelial cells. The outer portion of the ear canal also has hair follicles on the skin. A pair of glands namely cerumenous and sebaceous glands is present on the both sides of the external auditory Canal/Meatus. The ear canal carries out its functions in smooth and appropriate manner due to the blood and nerve supply.

Middle Ear

The middle ear is a small air filled cavity of about 2cc. It is located between the external ear and the inner ear. The middle ear is that portion of the ear, which plays a very vital role in "Bio medical Engineering" activities of the human ear. The middle ear has two important parts - (i) Eardrum and (ii) Ossicles.

Eardrum (tympanic membrane)

It forms the outer wall of the middle ear cavity. The tympanic membrane is commonly known as eardrum. It is a very thin membrane and its thickness is about 1/10th mm. The normal tympanic membrane is pinkish in colour. It is roundish oval in shape. It is also concave. It has an area of about 85 to 90 sq.mm. The conical shape of the tympanic membrane transmits maximul sounds into the middle ear.

Ossicles or Hammer, anvil and stirrup (malleus, incus and stapes)

The middle ear has three small bones known as the ossicles. These three bones are the smallest bones in human body, which are joined to one another and thus form a chain. The chain is commonly known as ossicular not only transmits sound waves from the middle ear to inner ear but also helps to amplify sound.

Malleus: It is a hammer shaped bone which has two handle, its long handle is attached to the tympanic membrane and short handle is free. For its typical hammer shape, it is known as "malleus".

Incus : This is second smaller bone of the ossicular chain .It is an anvil shaped bone

with the head and two handle like structures. The head of the malleus is attached to the head of the incus. The long handle of the incus is attached to the third ossicle called Stapes, while the short handle is free.

Stapes: This is the smallest bone not only in the middle ear but also in the whole body. It is a stirrup shaped bone with a small head and an oval shapped footplate. Among all three ossicles, stapes plays very vital role in both transmission and amplification of sound waves from middle ear to inner ear.

Inner Ear

Inner ear is also known as an internal ear. It is also referred to as Bony Labyrinth as it consists of a set of complicated tubes in it. It is also called as vestibule since it has a passage to the other portions of the auditory system and brain. Both the organs of hearing as well as the organ of the balance are situated in the inner ear. The main three parts of the inner ear are Cochlea, Vestibular system and Auditory nerve.

Cochlea:

Cochlea, the organ of hearing is a snail shaped bony structure. It is made up of a twisting bony shell, which is about 1cc wide and 5 mm broad from base to apex. The cochlea is divided into three fluid-filled parts. Two canals are for the transmission of pressure and the third one is the sensitive organ of Corti, which detects pressure impulses and responds with electrical impulses which travel along the auditory nerve to the brain. It is divided lengthwise by the organ of Corti, which is the main organ of mechanical to neural transduction. Inside the organ of Corti is the basilar membrane, a structure that vibrates when waves from the middle ear propagate through the cochlear fluid - endolymph. The basilar membrane is tonotopic, so that each frequency has a characteristic place of resonance along it. Characteristic frequencies are high at the basal entrance to the cochlea, and low at the apex. Basilar membrane motion causes depolarization of the hair cells, specialized auditory receptors located within the organ of Corti.[5] While the hair cells do not produce action potentials themselves, they release neurotransmitter at synapses with the fibers of the auditory nerve, which does produce action potentials. In this way, the patterns of oscillations on the basilar membrane are converted to spatiotemporal patterns of firings which transmit information about the sound to the brainstem

Vestibular system

In most mammals, the vestibular system, is the sensory system that provides the leading contribution about the sense of balance and spatial orientation for the purpose of coordinating movement with balance. Together with the cochlea, a part of the auditory

system, it constitutes the labyrinth of the inner ear in most mammals, situated in the vestibulum in the inner ear (Figure 1). Since movements consist of rotations and translations, the vestibular system comprises two components: the semicircular canal system, which indicates rotational movements; and the otoliths, which indicates linear accelerations. The vestibular system sends signals primarily to the neural structures that control eye movements, and to the muscles that keep an animal upright. The projections to the former provide the anatomical basis of the vestibulo-ocular reflex, which is required for clear vision; and the projections to the muscles that control posture are necessary to keep an animal upright.

The brain uses information from the vestibular system in the head and from proprioception throughout the body to understand the body's dynamics and kinematics (including its position and acceleration) from moment to moment.

Auditory nerve

The cochlear nucleus in the brainstem receives the sound information from the cochlea which travels via the auditory nerve . From there, the signals are projected to the inferior colliculus in the midbrain tectum. The inferior colliculus integrates auditory input with limited input from other parts of the brain and is involved in subconscious reflexes such as the auditorystartle response.

The inferior colliculus in turn projects to the medial geniculate nucleus, a part of the thalamus where sound information is relayed to the primary auditory cortex in the temporal lobe. Sound is believed to first become consciously experienced at the primary auditory cortex. Around the primary auditory cortex lies Wernickes area, a cortical area involved in interpreting sounds that is necessary to understand spoken words.

Hearing problems may be caused due to the disturbances (such as stroke or trauma) at any of these levels, especially if the disturbance is bilateral. Auditory hallucinations or more complex difficulties in perceiving sound may also occure for the same in some instances.

3.3.4 Types of hearing loss

Hearing loss have been classified under various subgroups from various angles. Some categories are as follow:

3.3.4.1 Age of onset

Hearing impairment may occur since birth or it may be acquired at any age in life.

Thus depending on the age of onset we have two groups of hearing loss such as-

(A) Congenital hearing loss

(B) Adventitious hearing loss

(A) Congenital hearing loss

It refers to any hearing loss occurring prior to birth or at the time of birth. It may be hereditary or may develop during prenatal or natal period.

(B) Adventitious hearing loss

It means that who is born with normal hearing and has acquired speech but later lost hearing ability due to infection, disease or some damage to the hearing mechanism.

Another two types of hearing loss can be mentioned here. These are:

i) Pre-lingual hearing loss- The term pre-lingual hearing loss refers to that hearing loss developed prior or before the language development or language acquisition or language age. The hearing loss developed during the first three years of life is considered as pre-lingual.

ii) Post-lingual hearing loss- The term post-lingual hearing loss refers to that hearing loss developed after the language had developed significantly. Post-lingual hearing loss can be sudden or progressive in nature. The person with post-lingual hearing loss finds it more difficult to adjust and adapt to deafness as compared to pre-lingual deafened persons.

3.3.4.2 On the location of the problem

Hearing loss is also classified into three types depending upon the location of the hearing problem or defect. There are three types of problems-

(A) Conductive hearing loss

(B) Sensorineural hearing loss and

(C) Mixed hearing loss

(A) Conductive hearing loss

Hearing problems when are located in the outer ear and middle ear it is called Conductive hearing loss. Conductive loss of hearing is curable.

(B) Sensorineural hearing loss and

Sensorineural hearing loss takes place when hearing problems arise out of the defects in the inner ear.

(C) Mixed hearing loss

Combination of conductive loss and sensorineural loss is called Mixed hearing loss.

3.3.4.3 Nature of hearing impairment

On the basis of nature, hearing impairment can be classified as:

A) Gradual hearing impairment

B) Sudden hearing impairment

A) Gradual hearing impairment-

Gradual hearing impairment is also termed as "progressive hearing loss". This refers to a slow deterioration of hearing sensitivity with time. This may be due to any infection or hereditary disorder or aging. Conductive or mixed or sensori-neural hearing impairment can be gradual or progressive in nature.

B) Sudden hearing impairment

In Sudden hearing impairment, the patient over night may suffer partial or complete hearing loss in either one or both ears. This hearing loss results due to onetime insult to the auditory system. Usually the damage to the auditory system results in a permanent hearing loss. Sudden hearing impairment is usually always of sensori-neural type.

3.3.4.4 Degree of hearing impairment

An important consideration of any hearing loss is the degree of impairment. On the basis of degree hearing impairment classified into the following sub-groups. Hearing loss or hearing sensitivity is measured in decibels (dB).

Normal hearing sensitivity is -10 dB to 25 dB. Degree of Hearing Loss as per the Ministry of Welfare (Govt. of India), Notification No.4283HW, dt. 6.9.86 are given in the following table:

Level	Types of Impairment Impairment	dB Levels	Speech discrimination	Percentage of Impairment
I.	Mild Hearing Impairment	dB 26 to 40 dB in better ear	100% in better ear	Less than 40%
II.	Moderate Hearing Impairment	41 to 55 dB in better ear	50% to 80% in better ear	40% -50%
III.	Severe Hearing Impairment	50 to 70 dB hearing impairment in better ear	40 % to 50 %	50 % -75%
IV.	(a) Total deafness	No hearing	no discrimination	100%
	(b) Near total deafness	91 dB & above in better ear	- do-	100% 75%-100%
	(c) Profound hearing Loss	71 to 90 dB	Less than 40% in better ear	

Decibel (dB) means a unit of relative loudness of a sound. Zero decibels (0 dB) designate the point at which people with normal hearing can detect even the faintest sound. Each succeeding number of dB indicates a certain degree of hearing loss.

1.3.4.5 On the basis of cause

Hearing loss can be classified as Exogenous Hearing Impairment, Endogenous Hearing Impairment and Idiopathic hearing impairment.

(a) Exogenous Hearing Impairment

This refers to hearing loss caused by all factors other than heredity. These factors include:

- Prenatal causes (Cause before birth)
- Natal causes (Causes at the time of birth)
- Post natal causes (Causes after birth)
- Infections

- Noise
- Aging

(b) Endogenous Hearing Impairment

This includes only "heredity" as the causative factor for hearing loss. Hereditary hearing loss may be transmitted as a dominant or recessive characteristic.

(c) Idiopathic Hearing Impairment

This refers to hearing loss of an unknown pathology or cause i.e., the causes of hearing loss is unknown.

3.3.5 Impediment caused by different types of hearing loss

Due to different types of hearing loss, an individual faces various types of profound consequences life which are restricted below-

1. Socially handicapped
2. Problems in Personal & Social Development
3. Personality Problems
4. Psychological Problems
5. Linguistic Problems
6. Abnormal Emotional Behaviour

1. Socially handicapped

Hearing impaired children find it very difficult to adjust with the environment of the society. They suffer from personality disorders & slow temperament, withdrawl or submissiveness etc. They very often fail to understand what other people say due to which they face communication difficulties.

2. Problems in Personal & Social Development

Personal & social development problem is very common with the hearing impaired children. The main barrier for them for communicating with other is language-which affects the socialisation process and plays a vital role in their personal & social development. The most significant aspect of these children is their increased dependence on others which causes sense of inferiority.

3. Personality Problems

Studies show that hearing impaired children face some personality problems. Partial hearing children face more problem than the totally deaf children since partially deaf child gets more frustrated as he tries to reach the level of normals.

4. Psychological Problems

Hearing impaired children suffer from behavioural problems. They suffer from inferiority complex since they find themselves helpless in adapting to circumstances that require verbal communication. They compare themselves with their peers and also judge the attitude of society towards them. They feel that they are different from the normal children which hampers the growth and development of their personality.

5. Linguistic Problems

The deaf children face difficulty for acquisition of language since language is an auditory vocal process which leads to very slow linguistics development in them. These children have to receive visually while the normal children receive orally. They differ significantly from the normal children so far as language development is considered. These children have a limited vocabulary; they lack comprehension of complex word and words with multiple meaning and concept. Moreover, they are faced with difficulty in understanding complex structure of language and sometimes they have no language exposure.

6. Abnormal Emotional Behaviour

Young hearing impaired children very often show abnormal emotional behaviour like throwing something to attract to attention to them. Lack of comprehension may invite tension and resistance in them. They get irritated when they cannot make them understood.

3.3.6 Let us sum up

In our society, speech and language are critical avenues for effective education and socialization. To know about Hearing Impairment, it is very much essential to know the process of hearing, types of hearing loss and causes leading to different types of hearing loss.

Through our organ- Ear, we are able to acquire hearing, auditory perception, or audition to perceive sound by detecting vibrations, changes in the pressure of the surrounding medium through time, we may hear sound through solid, liquid, or gaseous matter. It is one of the traditional five senses; partial or total inability to hear is called hearing loss. To understand properly about the hearing loss, it is necessary to first understand the anatomy of the ear. The ear has three main parts:

the outer ear, the middle ear and the inner ear.

To understand properly about the hearing loss, it is necessary to first understand the anatomy of the ear. The ear has three main parts: the outer ear, the middle ear

and the inner ear. The external or outer ear is the outer most portion of the ear. It has two parts-(i) Pinna and (ii) Ear canal. The middle ear has two important parts - (i) Eardrum and (ii) Ossicles. The main three parts of the inner ear are (i) Cochlea, (ii) Vestibular system and (iii) Auditory nerve. Hearing loss has been classified under various subgroups from various angles. Some categories are as follow:

(i) On age of onset (ii) On the location of the problem (iii) Nature of hearing

impairment (iv) Degree of hearing impairment (v) On the basis of cause. Hearing loss or hearing sensitivity is measured in decibels (dB). Decibels (dB) mean a unit of relative loudness of a sound. Zero decibels (0 dB) designate the point at which people with normal hearing can detect even the faintest sound. Each succeeding number of dB indicates a certain degree of hearing loss. Normal hearing sensitivity is -10 dB to 25 dB. Due to different types of hearing loss, an individual faces various types of profound consequences which are restricted below-

1. Socially handicapped
2. Problems in Personal & Social Development
3. Personality Problems
4. Psychological Problems
5. Linguistic Problems
6. Abnormal Emotional Behaviour

3.3.7 "Check your of progress"

1 How many parts are there in the Ear?

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.2 What is the function of ossicle?

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3 Write the name of main parts of the inner ear.

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4 What is the structure of cochlea?

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5 What is the value of normal hearing?

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3.4 □ Definition of hearing loss, demographics & associated terminologies: deaf/deafness/hearing impaired/disability/ handicapped

Structure

3.4.1 Introduction

Hearing is the main sensory pathway through which speech and verbal communication develop. A child is likely to speak incorrectly if he/she hears imperfectly. Hearing also influences learning and other aspects of maturation. So it is important for us to know about the normal hearing sensitivity .A normal hearing sensitivity means the person has no known pathology or known history of infection or any kind of disorder and without any kind of significant difficulties, is able to hear even the softest sound or whisper. Generally a normal hearing sensitivity level is -10 dB HL to 25 dB HL. the implications of an auditory impairment change due to change of situation and person. Different types of terms are used to describe the persons who are suffering from hearing problem. Speech and hearing experts generally use these terms interchangeably. This is not correct, because meaning of each term is different. So it is essential for us to know the meaning of these terminologies

3.4.2 Objectives

After going through this subunit the learners will be able to

- know the definition of hearing loss
- know about the different terminologies of hearing impairment
- know the steps involved in hearing process

3.4.3 Definition of hearing loss

Any degree of impairment of the ability to apprehend sound is called hearing loss. Hearing loss, also known as hearing impairment, is a partial or total inability to hear. It may occur in one or both ears .Hearing impaired are those in whom the sense of hearing is non functional for ordinary purposes of life. They do not hear/understand sound at all even with amplifier.

Hearing loss exists when there is diminished sensitivity to the sounds normally heard. The people who have relative insensitivity to sound in the speech frequencies come under the terms hearing impairment or hard of hearing.

According to the increase in volume above the usual level necessary before the listener can detect it the severity of a hearing loss is categorized.

Deafness is defined as a degree of loss such that a person is unable to understand speech even in the presence of amplification. In profound deafness, even the loudest sounds produced by an audiometer (an instrument used to measure hearing by producing pure tone sounds through a range of frequencies) may not be detected. In total deafness, no sounds at all, regardless of amplification or method of production, are heard.

Description

Sound can be measured accurately. The term decibel (dB) refers to an amount of energy moving sound from its source to our ears or to a microphone. A drop of more than 10 dB in the level of sound a person can hear is significant. Sound travels through a medium like air or water as waves of compression and rare faction. These waves are collected by the external ear and cause the tympanic membrane (ear drum) to vibrate. The chain of ossicles connected to the ear drum, the incus, malleus, and stapes carries the vibration to the oval window, increasing its amplitude 20times on the way. There the energy causes a standing wave in the watery liquid (endolymph) inside the organ of Corti. (A standing wave is one that does not move. A vibrating cup of coffee will demonstrate standing waves.) The configuration of the standing wave is determined by the frequency of the sound.

Many thousands of tiny nerve fibers detect the highs and lows of the standing wave and transmit their findings to the brain, which interprets the signals as sound. To summarize, sound energy passes through the air of the external ear, the bones of the middle ear and the liquid of the inner ear. It isthen translated into nerve impulses, sent to the brain through nerves and understood there as sound.
It follows that there are five steps in the hearing process:

- air conduction through the external ear to the ear drum
- bone conduction through the middle ear to the inner ear
- water conduction to the Organ of Corti
- nerve conduction into the brain
- interpretation by the brain.

If any problems arise in the ear in these steps due to anatomy and physiology of the ear or any problems in brain then comes hearing loss.

Hearing can be interrupted in several ways at each of the five steps.

Ear wax, foreign objects, infection, and tumors can block the external ear canal. Overgrowth of the bone, a condition that occurs when the ear canal has been flushed with cold water repeatedly for years, can also narrow the passage way, making blockage and infection more likely. The ear drum is so thin a physician can see through it into the middle ear. Sharp objects, pressure from an infection in the middle ear,even a firm cuffing or slapping of the ear, can rupture it. It is also susceptible to pressure changes during scuba diving.

Several conditions can diminish the mobility of the ossicles (small bones) in the middle ear. **Otitis media** (an infection in the middle ear) occurs when fluid cannot escape into the throat because of blockage of the eustachian tube. The fluid that accumulates, whether it be pusor just mucus and dampens the motion of the ossicles. A disease called **otosclerosis** can bind the stapes in the oval window and there by cause deafness.

All the conditions mentioned so far, that occur in the external and middle ear, are causes of conductive hearing loss. The second category, sensory hearing loss, refers to damage to the Organ of Corti and the acoustic nerve. The leading cause of sensory hearing loss is prolonged exposure to loud noise. A million people have this condition, many identified during the military draft and rejected as being unfit for duty. The cause is often believed to be prolonged exposure to rock music. The other leading cause of noise induced hearing loss (NIHL)is occupational noise exposure and is ample reason for wearing ear protection on the job.

A third group of people over 65 have sensory hearing loss due to **aging**. Both NIHL and presbycusis are primarily high frequency losses. In most language, it is the high frequency sounds that define speech, so these people hear plenty of noise, they just cannot easily make out what it means. They have particular trouble selecting out speech

from background noise. Brain infections like **meningitis**, drugs such as the aminoglycoside **antibiotics** (streptomycin, gentamycin, kanamycin, tobramycin), and Meniere's disease also cause permanent sensory hearing loss. Meniere's disease combines attacks of hearing loss with attacks of vertigo. The symptoms may occur together or separately. High doses of salicylates like **aspirin** and quinine can cause a temporary high frequency loss. Prolonged high doses can lead to permanent deafness. There is a hereditary form of sensory deafness and a congenital form most often caused by rubella (German **measles**). Sudden hearing loss—at least 30dB in less than three days is most commonly caused by cochleitis, a mysterious viral infection.

The final category of hearing loss is neural. Damage to the acoustic nerve and the parts of the brain that perform hearing are the most likely to produce permanent hearing loss. Strokes, multiple sclerosis, and acoustic neuromas are all possible causes of neural hearingloss. Hearing can also be diminished by extra sounds generated by the ear, most of them from the same kinds of disorders that cause diminished hearing. These sounds are referred to as **tinnitus** and can be ringing, blowing, clicking, or anything else that no one but the patient hears.

3.4.4 Defferent terminologies used in hearing impairment

The term "hearing loss" is used whenever specific reference is being made to a hearing impairment, which is of a particular intensity magnitude. It is measurement made on an audiometer and reported in decibels (dB).

Hearing Impairment is a genetic term referring to any organic hearing problem regardless of etiology or degree. It is a deviation or change for the worse in either structure or function which is usually outside the range of normal .It generally includes a broad range of hearing disability, which ranges in severity from mildly hearing impaired to profoundly deaf.

There is often confusion over the terms **"hearing impaired," "hard of hearing," "deaf,"** and **"deafened,"** both in definition and appropriateness of use.

'Hearing impairment', 'hearing disability' and **'hearing handicap'** are not synonymous term.

The term **"hearing impaired"** is often used to describe people with any degree of hearing loss, from mild to profound, including those who are deaf and those who are hard of hearing. Many individuals who are deaf or hard of hearing prefer the terms "deaf" and "hard of hearing," because they consider them to be more positive than the

term "hearing impaired," which implies a deficit or that something is wrong that makes a person less than whole.

"Deaf" usually refers to a hearing loss so severe that there is very little or no functional hearing.

"Hard of hearing" refers to a hearing loss where there may be enough residual hearing that an auditory device, such as a hearing aid or FM system, provides adequate assistance to process speech.

"Deafened" usually refers to a person who becomes deaf as an adult and, therefore, faces different challenges than those of a person who became deaf at birth or as a child.

Deaf, deafened, and hard of hearing individuals may choose to use hearing aids, cochlear implants, and/or other assistive listening devices to boost available hearing. Alternatively, or in addition, they may read lips, use sign language, sign language interpreters, and/or captioning.

People who are deaf or hard of hearing may have speech that is difficult to understand due to the inability to hear their own voice.

The term **"Deafness"** refers to hearing disabilities that preclude successful processing of linguistic information through audition, with or without a hearing aid.

The term **"hearing handicap"** refers to the effect of the hearing impairment on the person's everyday situations and the disadvantages imposed by the impairment sufficient enough to affect one's personal efficiency in the activities of daily living. Thus in other words, the influence of the hearing impairment is the hearing handicap. According to the definition adopted by Ministry of Social Justice and Empowerment, Govt. of India and Persons with Disability Act (P.W.D.-1995-96), "hearing handicap" refers to hearing loss of 60dB HL or more on the better ear.

3.4.5 Let us sum up

Hearing is the main source of development of speech and verbal communication. So it requires perfect hearing to develop a child properly. Normal hearing sensitivity means a person has no infection or disorder and is able to hear properly. Its level is –10dB HL to 25dB HL. Auditory impairment varies due to change of situation and person. Hearing loss means any degree of impairment. Hearing impaired person does not hear at all with the amplified speech. The severity of the hearing loss is categorized according to the increase in volume above normal level. Profound deafness means unable to detect the

loudest sounds and total deafness means no sounds at all. Unit of sound is decibel (dB). Sound energy passes through the air of the external ear, the bones of the middle ear and liquid of the inner ear. It is then translated into the nerve impulses which are sent to the brain through nerve. If any problem comes in the ear, hearing loss arises.The external ear canal can be blocked with ear wax, foreign objects, infections and tumor. Several conditions like Otitis media or otosclerosis can diminish the mobility of the ossicles in the middle ear and can cause deafness. Conductive hearing loss is caused due to all above conditions. Sensory hearing loss refers to damage to the organ of corti and acoustic nerve which is caused due to prolonged exposure to loud noise, aging, brain infection like meningities, drugs like aminoglycoside, meniere's disease, High doses of salicylate like aspirin and quinine etc. Neural hearing loss is caused due to strokes, multiple sclerosis and acoustic neuromas. Depending upon the hearing loss, different terms are –(i) hearing impaired,(ii) hard of hearing,(iii) deaf, (iv) deafened,(v) deafness and (vi)hearing handicap.

3.4.6 "Check your progress"

1. What is the value of normal hearing sensitivity level?

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2. What is hearing loss?

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3. How many steps are involved in hearing process?

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4. What is Otitis Media?

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5. What do you mean by 'Hard of hearing'?

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3.5 □ Challenges arising due to Congenital and acquired hearing loss

Structure

3.5.1 Introduction

The main sensory pathway through which speech and verbal communication develop is hearing. Due to imperfect hearing a child is likely to speak incorrectly. Again, hearing also influences learning and other aspects of maturation. Our knowledge of the world around us is reduced because of hearing impairment. It also adversely affects the child's performance in learning. The types of hearing loss are discussed in previous chapter. It is seen that congenital and acquired hearing loss comes under one type of hearing loss.

3.5.2 Objectives

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

- Understand the meaning of congenital and acquired hearing loss

- Understand the types of congenital hearing loss
- Understand the impact of hearing loss
- Know the challenges arises due to congenital and acquired hearing loss

3.5.3 Congenital hearing loss

Congenital hearing loss is any hearing loss that is present at birth. The cause can be genetic and hereditary, caused by issues during pregnancy or caused from an issue during the birthing process.

The causes of hearing loss and deafness can be divided into congenital causes and acquired causes.

3.5.3.1 Congenital causes

Congenital causes may lead to hearing loss being present at or acquired soon after birth. Hearing loss can be caused by hereditary and non-hereditary genetic factors or by certain complications during pregnancy and childbirth, including:

- maternal rubella, syphilis or certain other infections during pregnancy;
- low birth weight;
- birth asphyxia (a lack of oxygen at the time of birth);
- inappropriate use of particular drugs during pregnancy, such as aminoglycosides, cytotoxic drugs, antimalarial drugs and diuretics;
- severe jaundice in the neonatal period, which can damage the hearing nerve in a newborn infant.

  Hearing loss may occur if any part of the ear is defected. It may be before birth or after birth. If it is shown in birth time then it is called congenital hearing loss. There is a range of congenital ear, nose and throat problems - some occurring alone and others as part of a syndrome. The underlying causes are varied but, as with any congenital disorder, they can be broadly divided into chromosomal abnormalities (mutations and inherited problems), diseases associated with prenatal infection, maternal drug abuse, environmental factors, iatrogenic causes and abnormalities of unknown aetiology.

3.5.3.2 Types of Congenital causes

An abnormality of the **External Ear, Middle Ear & Inner Ear** may lead to congenital hearing loss. Various types of abnormality are shown in these types. Such as:

Anotia/microtia

Anotia is the total absence of the auricle, most often with narrowing or absence of the external auditory meatus. Strictly speaking, in microtia, there is some degree of malformation of the external ear (± narrowing or absence of the external auditory meatus) in contrast to a 'small ear' which is normally formed, as seen in Down's syndrome. These conditions may be unilateral or bilateral - the latter is less common.

Macrotia

This is a large but normally formed auricle, not usually associated with functional abnormality. It is defined as an ear which is two or more standard deviations from the mean. True macrotia is rare but may be seen in association with vascular malformations, hemihypertrophy, neurofibromatosis and secondary to haemangioma. It is more conspicuous if the ear is prominent too. Surgical correction can be carried out. The Antia-Buch technique, which involves freeing the helical flap and repositioning it, is the most commonly used procedure.

External auditory meatus atresia

Congenital atresia of the external auditory canal is caused by a failure of canalisation of the epithelial plug portion of the first bronchial cleft. This results in the formation of a membranous or bony (or both) plate at the level of the tympanic membrane. There may be associated ossicular malformations.

Abnormalities of the middle ear

In the absence of other problems, hearing loss associated with these abnormalities is often picked up during the course of routine infant and childhood audiological assessments. More specialist assessment and management is carried out in the ENT department.

Tympanic membrane abnormalities

The tympanic membrane may be small (eg, congenital rubella syndrome), distorted (eg, VATER syndrome [Vertebral anomalies, Anal atresia, Tracheo-oesophageal fistula, (o) Esophageal atresia and Renal anomalies and radial dysplasia]) or replaced by fibrous tissue or a bony plate.

Ossicular abnormalities

- There are a number of different ossicular abnormalities, which may affect one or more of the ossicles.
- There may be absence of part or all of these bones and there can also be varying degrees of fusion.
- The associated intratympanic muscles are often affected and there can be an aberrant course of the facial nerve.
- Surgery can go some way towards correcting this.

Abnormalities of the tympanic cavity

Congenital cholesteatoma (2-3% of all cholesteatomas)

It is usually unilateral, may be bilateral, and presents as conductive hearing loss. The tympanic membrane is intact and overlies a white mass (this varies from a small pearl size to filling the entire middle ear) which can act as a source of infection. CT scanning to assess the lesion is advisable as this will dictate the surgical approach.

Vascular abnormalities

These include the presence in the middle-ear cavity of internal carotid artery aneurysms, jugular bulb abnormalities and very rare cases of an anomalous internal carotid artery. These vascular abnormalities tend to present with limited functional problems but a pulsatile red, smooth mass may be seen behind the tympanic membrane on examination. Their presence should be confirmed in a specialist unit, as it will have implications in considering any future intervention in.

Congenital perilymph fistula

This may occur, linking the perilymphatic space of the inner ear to the middle-ear cavity. There are often associated deformities. Children present with fluctuating and progressive sensorineural hearing loss ± tinnitus, vertigo and, occasionally, recurring meningitis. Diagnosis is confirmed on CT scanning and surgical correction can be carried out.

Abnormalities of the inner ear

The inner ear is the collection of structures within the bony labyrinth: the semicircular canals, the vestibule and the cochlea. Congenital abnormalities here are rare and will result in deafness in addition to possible dizziness, and account for up to 20% of children with sensorineural hearing loss.

People with abnormalities of the inner ear are at increased risk of developing recurrent meningitis or a perilymphatic fistula. Middle-ear infections should therefore be treated aggressively. There is also increased risk of developing cerebrospinal fluid leaks after minor head injuries and therefore it is advisable to avoid contact sports.

These deformities are typically classified according to embryonic developmental stages.

Any of the structures can be involved.

Cochleosaccular dysplasia is probably the most common form of inner-ear congenital deformity and is characterised by a collapse of the cochlear duct and saccule.

3.5.4 Acquired hearing loss

Acquired hearing loss is a hearing loss that appears after birth. The hearing loss can occur at any time in one's life due to illness or injury. The problems may occur in any part of the ear. Following are examples of conditions that can cause acquired hearing loss in children:

3.5.4.1 Acquired causes

Following are the acquired causes which may lead to hearing loss at any age :

- infectious diseases such as meningitis, measles and mumps, Encephalitis,
- Chicken pox, Flue;
- chronic ear infections;
- collection of fluid in the ear (otitis media);
- use of particular drugs, such as some antibiotic and antimalarial medicines;
- injury to the head or ear;
- excessive noise, including occupational noise such as that from machinery and explosions, and recreational noise such as that from personal audio devices, concerts, nightclubs, bars and sporting events;
- ageing, in particular due to degeneration of sensory cells;
- wax or foreign bodies blocking the ear canal.

Chronic otitis media is the leading cause of hearing loss among children,

In the previous unit it is known that on the location of the problem, hearing loss is also classified into three types. These are

- Conductive loss

- Sensorineural hearing loss and
- Mixed hearing loss

These three types of hearing losses are common for congenital hearing loss and acquired hearing loss. It can vary in degrees of severity and occur in all age groups; however, the elderly are most commonly the hearing impaired. Hearing is broken up into two different parts:

- The conduction of the sound and
- The nerve processing of the sound.

On the basis of anatomy and the place of problem the distinction is made.

- **Conductive Loss:** Problems with sound waves travelling to the cochlear (the external and middle ear)
- **Sensorineural Loss:** Nerve related problems involving the cochlear and the inner ear
- **Mixed hearing loss:** Is a combination of both conductive and sensorineural hearing loss at the same time. Both the middle and inner ear are involved.

3.5.5 Challenges

Hearing and speech are essential tools of learning, playing and developing social skills for a child. Children learn to communicate by imitating the sounds they hear. If they have a hearing loss which is undetected and untreated, they can miss much of the speech and language around them. This results in delayed speech/language development, social problems and academic difficulties. These children score a relatively low score on IQ testing. In general their performance in academic subjects of the school is also poor. They face difficulty in personal-social adjustment.

3.5.5.1 Impact of hearing loss

Functional impact

Individual's poor ability to communicate with others is one of the main impacts of hearing loss. Spoken language development is often delayed in children with deafness.

On the academic performance of children hearing loss and ear diseases such as otitis media can have a significantly adverse effect. However, when opportunities are provided for people with hearing loss to communicate, they can participate on an equal basis

with others. The communication may be through spoken/-written language or through sign language.

Social and emotional impact

Limited access to services and exclusion from communication can have a significant impact on everyday life, causing feelings of loneliness, isolation and frustration, particularly among older people with hearing loss.

If a person with congenital deafness has not been given the opportunity to learn sign language as a child, he or she may feel excluded from social interaction.

Economic impact

Children with hearing loss and deafness rarely receive any schooling in developing countries. Adults with hearing loss also have a much higher unemployment rate. A higher percentage of people with hearing loss among those who are employed, are in the lower grades of employment compared with the general workforce. Unemployment rates among this group will decrease by improving access to education and vocational rehabilitation services, and raising awareness especially among employers about the needs of people with hearing loss.

Hearing loss substantially affects social and economic development in communities and countries also in addition to the economic impact of hearing loss at an individual level.

3.5.5.2 Challenges arising due to congenital hearing loss

In congenital hearing loss child has not acquired the basic language and speech patterns which are required in intellectual functioning, academic success and social adjustment.

Congenital hearing loss is associated with certain behavioural problems. In adapting to circumstances that requires verbal communication the H.I (hearing impaired) children feel invariable inferior and helpless. They have a poor self concept which damages the development of personality (Loeb and Saregiani, 1986).

Language development of the congenitally deaf children differs markedly from that of the normal. In fact, the normal child learns the language, but the HI child is taught language. They process language and linguistic utterances visually.

In congenital hearing loss cognitive functioning also does not develop. They face difficulty in understanding abstracts concepts. They possess poor comprehension ability because of limited vocabulary.

In case of congenital hearing loss of mild or moderate level, child can achieve his/her goal with the help of proper guidance, treatment and use of proper devices. But in case of severe or profound level child cannot progress according to his/her goals.

In case of congenital sensori-neural hearing loss, child faces many problems in various areas such as academic, social etc.

3.5.5.3 Challenges arising due to acquired hearing loss

In addition to the challenges discussed in the case of congenital hearing loss, acquired hearing loss children may face following challenges.

Acquired hearing loss is of two types- (i) Pre-lingual and (ii) Post-lingual. If a child suffers from hearing loss before he/she has achieved basic competency in his or her primary language (i.e. occurring before age 3 years (Schein, 1987) then it is called Pre lingual hearing loss. Whereas post lingual hearing loss is that which occurs after the basic acquisition of language i.e.in later childhood or adulthood (Vernon and Andrews, 1990).

At the age of one year or a little more, a child with normal hearing begins to speak and he or she acquires many pre-verbal skills (skills that are learned by the child before acquiring speech and language). Also develops a significant amount of receptive language (understanding of language) in the first year of life. A child with hearing impairment does not get a chance to learn many of the pre-verbal skills (for e.g. imitation of voice) since the development of these skill is related to hearing and thus begins to lag behind average children of the same age.

As the development of many of the pre-verbal skills (for e.g. imitation of voice) is related to hearing ,a child with hearing impairment does not get a chance to learn these skills and thus begins to lag behind average children of the same age. After the stage of learning basic language if a child develops a hearing loss he or she would have an advantage over a child who has had hearing loss pre-lingually. However, children with post –lingual hearing loss is at risk for losing language and speech skills that they have acquired if proper care is not taken for him in advance.

3.5.6 Let us sum up

Speech and verbal communication of a child is developed on the basis of hearing capacity. Effect of poor hearing may affect his speaking, learning and performance. Congenital hearing loss is any hearing loss being present or acquired soon after the birth due to genetic factors or by certain complication during pregnancy and child birth. An

abnormality of the external ear, middle ear and inner ear may lead to congenital hearing loss. Acquired hearing loss is a hearing loss that appears after birth which may occur at any time in any part of the ear due to illness or injury. Hearing loss is classified into three types – (i) Conductive loss, (ii) Sensorineural loss and (iii) Mixed hearing loss. If a child is having any hearing loss problem which is not detected and treated, then there may be great impact which may result in delayed speech/ language development, social problems and academic difficulties. He may face personal – social adjustment. Moreover, there may be functional impact, emotional impact as well as economic impact on his life due to this. In addition to different impacts of hearing loss at an individual level, hearing loss substantially affects the social and economic development in communities and countries. In congenital hearing loss, child does not acquire language and speech patterns which are required in intellectual functioning, academic success and social adjustment. Due to this he/she suffers from inferiority complex and feels helpless which affects his/ her day to day life. Acquired hearing loss is of two types – (i) Pre- lingual and (ii) Post- lingual. Pre- lingual hearing loss is that which occurs before the child has achieved basic competency in his/ her primary language. Post- lingual hearing loss is that which occurs after the basic acquisition of language. Apart from speaking at the age of one year, a normal hearing child acquire many pre- verbal skills which is not possible for a child with hearing loss and thus lag behind the average child of his age. However, child with post –lingual hearing loss is at risk for loosing language and speech skills that acquired if proper care is not taken for him in time.

3.5.6 "Check your progress"

1. What do you mean by congenital hearing loss?

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2. Write two types of abnormality for congenital causes.

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3. What do you mean by tympanic membrane abnormality?

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4. What is the leading cause of hearing loss among children?

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5. Write down one challenge arising due to acquired hearing loss?

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3.5.7 References

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Unit : 4 □ Impact of Hearing Loss

Unit: 4.1 □ Characteristics of learners with hearing loss and impact of different degree of hearing impairment on communication.

Structure

4.1.1 Introduction

Hearing is the ability to perceive sound. A person suffering from hearing impairment has difficulty in perceiving or identifying sound clearly due to auditory problems. The impairment may be unilateral or bilateral ears. Due to this problem child can face problem in verbal communication skill and It can affect several development areas personal-social, cognitive and academic.

4.1.2 Objective:

- To understand symptom of hearing loss during infancy and child hood.
- To understand characteristics of learners having hearing loss.
- To understand different degrees and communication of hearing loss.
- To understand, and address the challenge in educating student with hearing loss.
- To understand different terminology in hearing loss.

4.1.3 What are the symptoms of children with hearing impairment?

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 do not look at the person being mentioned, e.g. "Where is Uncle Joy?"
- 10-12 months old no response to their names being called or frequently used words or phrases.

During childhood:

- Delayed response to sound
- Cannot hear clearly what others are saying
- Show difficulty in locating the sound source
- Pay more than usual attention to speaker's facial expression and lip movement while listening.
- Give irrelevant answers or misinterpret instructions
- Request for repetition during conversation
- Show poorer ability to understand speech in a noisy environment
- Tend 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 as a result of communication difficulty.

4.1.4 Characteristics of learners with hearing loss

- Deaf/Deafness refers to a person who has a profound hearing loss and uses sign language.
- Hard of hearing refers to a person with a hearing loss who relies on residual hearing to communicate through speaking and lip-reading.
- Hearing impaired is a general term used to describe any deviation from normal hearing, whether permanent or fluctuating, and ranging from mild hearing loss to profound deafness.
- Residual hearing refers to the hearing that remains after a person has experienced a hearing loss. It is suggested that greater the hearing loss, the lesser the residual hearing.

4.1.5 Characteristics of learners:

- Language and speech- The ability to learn language and speech is the most severely affected area of development of hearing impairment.
- Intellectual ability- Thinking process of normal and deaf children are found to be similar. Also cognitive abilities of deaf children are essentially unimpaired expect in those cases which involve language experience. But deaf children are retarded in intellectual task which requires verbal skill and highly performance in non-verbal intelligence.
- Academic Performance- Hearing impaired children are frequently handicapped in various degree of hearing loss and it effect on educational performance and particularly and particular handicapped in reading which relies heavily upon language skill.
- Adjustment of social interaction Our social interaction, depends upon communication. So deaf children have communication problems that's why they have problem of social interaction such children live in a world of isolation and

from a group of their own an association of the deaf for their common interest and interaction.

- Behavioral problem- Deaf learners feel invariably inferior and helpless in adapting to circumstances that require verbal communication. So regard non-verbal communication absence of verbal/they have poor self concept which damages the development of personality.
- Socially handicapped - Learners with hearing loss can not adjust with society because they suffer from communication difficulty and fail to understand what others hearing people say.
- Problem in personal and social development- Language becomes a barrier for deaf learner for purpose of communication with others so this affects the socialization process and plays a vital role in the personal and social development of hearing loss learner.
- Personality problem- Hearing difficulty may create more personality problem because a deaf learner is more frustrated as he/she tries to reach the level of the normal and a totally deaf child seems reconciled to his take.

4.1.5.1 "Check your progress" - 1

1) During infancy what are the symptoms of children with hearing impairment?

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2) What is hard of hearing?

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3) What is deafness?

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4) What is Residual hearing?

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5) What is Hearing impairment?

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6) Mention any three characteristics of learners with hearing loss?

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4.1.6 Impact of different degree of hearing impairment on communication.

Hearing impairment results from a number of causes and is usually characterized by the type and degree of hearing loss. Type of hearing loss is related to the site of the disorder within the auditory system, and degree of loss is related to the extent that the disorder is infringing on normal function. Defining both the type and degree of hearing loss is a cornerstone of audiology.

4.1.6.1. Importance of Hearing:

The sense of hearing is essential as:

- It is the foundation for development of verbal language
- It helps the person to live effectively in the environment
- It helps in better communication even over long distances.

4.1.6.2 The process of hearing:

- The physical processing of hearing occurs in three groups of structures, commonly known as the outer, middle, and inner ears.

- The outer ear has three main components: the auricle, the ear canal or meatus, and the outer layer of the eardrum or tympanic membrane. The outer ear serves to collect and resonate sound, assist in sound localization, and function as a protective mechanism for the middle ear.
- The middle ear is an air-filled space located within the temporal bone of the skull. It contains the ossicular chain, which consists of three contiguous bones suspended in space, linking the tympanic membrane to the oval window of the cochlea. The middle ear structures act as an impedance matching device, providing a bridge between the airborne pressure waves striking the tympanic membrane and the fluid-borne traveling waves of the cochlea.
- The inner ear contains the cochlea, which is the sensory end organ of hearing. The cochlea consists of fluid-filled membranous channels within a spiral canal that encircles a bony central core. The sound waves, transformed into mechanical energy by the middle ear, set the fluid of the cochlea into motion in a manner consistent with their intensity and frequency. Waves of fluid motion impinge on the membranous labyrinth and set off a chain of events that result in neural impulses being generated at the VHIth cranial nerve which is perceived by the auditory cortex in the temporal lobe in the brain.
- Impediment to sound across any of the three structures can result in loss in hearing acuity called as hearing loss.

4.1.6.3 Types of hearing loss:

According to anatomical origin, hearing loss are of three major types :

- **Conductive hearing loss** - pertaining to the outer and middle ear
- **Sensorineural hearing loss** - pertaining to the inner ear only.
- **Mixed hearing loss** -pertaining to the outer/middle and inner ear.

According to the perceived loudness, hearing loss can be categorized as :

- **Hearing sensitivity loss**
- **Suprathreshold hearing disorders**
- **Functional hearing loss**

Hearing sensitivity loss is the most common form of hearing disorder. It is characterized by a reduction in the sensitivity of the auditory mechanism so that sounds need to be of higher intensity than normal before they are perceived by the listener.

Suprathreshold disorders are less common, may or may not include hearing sensitivity loss, and often result in reduced ability to perceive speech properly.

Functional hearing loss is the exaggeration or fabrication of a hearing loss. In addition to type of loss, a hearing disorder can be described in terms of time of onset, time course, and whether one or both ears is involved.

A hearing disorder can be described by the time of onset:

- **Congenital:** present at birth
- **Acquired:** obtained after birth
- **Adventitious:** not congenital; acquired after birth; coming by chance/accidental
- Hearing disorder can also be described by its time course:
- **Acute:** of sudden onset and short duration
- **Chronic:** of long duration **Sudden:** having a rapid onset
- **Gradual:** occurring in small degrees
- **Temporary:** of limited duration
- **Permanent:** irreversible
- **Progressive:** advancing in degree
- **Fluctuating:** aperiodic change in degree

In addition, hearing disorder can be described by the number of ears involved:

- **Unilateral: pertaining to one ear only**
- **Bilateral: pertaining to both ears**

Sensitivity Loss

Degree of hearing sensitivity loss is commonly defined on the basis of the audiogram.Normal sensitivity ranges from -10 to +25dBHL. All other classifications are based on generally accepted terminology. These terms might be used to describe the pure-tone thresholds at specific frequencies, or they might be used to describe the puretone average or threshold for speech recognition. Pure-tone average is the mean of thresholds at 500, 1000, and 2000 Hz.

General guideline for describing degree of hearing loss

Degree of loss	Range (in dB HL)
Normal	-10 to 25
Mild	26 to 40
Moderate	41 to 55
Moderately severe	56 to 70
Severe	71 to 90
Profound	>90

dB level	Type of Impairment	Ability *to perceive sound*	Speech discrimination	Communication
0 to 25 dB HL	Normal Hearing	Normal	Normal	Speech is normal and normal pattern of development with good auditory perceptive skills.
26-40 dB HL.	Mild Hearing Loss	Difficult to identify soft sound such as	100% better ear whispering and others.	Speech and language developments are within normal limits. May exhibit occasional auditory perception problems some educational retardation likely.
"41-55 dBHL	Moderate Hearing Loss	Unable to hear clearly what others are saying during conversation. Hearing aids are necessary.	50% to 80% better ear	Language development and speech are mildly affected. Difficulty with rarely used words, minor differences in meaning of words and idioms, defective articulation but still intelligible speech loss quality and inflection almost normal. Reading and writing delayed. Vocabulary training, reading and writing to be special attended train addition to schooling.
56-70 dB HL	Moderatey-Severe Hearing	Unable to clearly hear loud noises such as telephone ring Severe	40% to 50% better ear	Grammar, vocabulary, articulation and voice are affected understand in loud speech .Early speech is unintelligible. Even with hearing aids show difficulty in understanding. Reading and writing need special assistance.
71-90 dBHL.	Severe Hearing Loss	Can only hear very loud noises and sounds such as shouting or vacuum cleaner noise.	No discrimination	Speech and language donot developments spontaneously. Sound produced very loudly at a distance of 1ft. and near of the ear. The voice will be high-pitched and articulation distorted.
>90 dB HL	Profound Hearing Loss	Difficult to perceive any sound	No discrimination	They donot rely on hearing for their communication. Language and speech develop only by training and they are educationally deaf. Communicate mostly through gestures, voice, inflection, articulation greatly affected. Required regular speech and language training regarding subject's expert.

4.1.7 Let us Sum Up

- Hearing ability suffer it leads from hearing difficulty.
- Problem will be unilateral and bilateral.
- Symptom of hearing loss infancy or it will be childhood.
- It will be several characterstics hearing loss and also learner activities
- It will be impact in different egree of hearing loss and it affected communiction of speech and language.

4.1.7.1 "Check Your Progress" - 2

1) What is the difference between normal hearing communication and profound hearing loss communication?

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2) What is the meaning of Unilateral and Bilateral hearing loss?

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3) According to anatomical origin how many type of hearing loss are there?

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4) Mention the type of physical processing of hearing?

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5) Where is the Ossicular chain situated?

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6) What is the name of VIIIth crenial nerve in brain?

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7) Write the full form of the P.T.A.

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4.1.8 Answer to Check Your Check Progress

"Check Your Check Progress" - 1

1) 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 do not look at the person being mentioned, e.g. "Where is Uncle Joy?" 10-12 months old No response to their names being called or frequently used words or phrases, e.g. "No".
2) Hard of hearing refers to a person with a hearing loss who relies on residual hearing to communicate through speaking and lip-reading.
3) Deaf/Deafness refers to a person who has a profound hearing loss and uses sign language.
4) Residual hearing refers to the hearing that remains after a person has experienced a hearing loss. It is suggested that greater the hearing loss, the lesser the residual hearing.
5) Hearing impaired is a general term used to describe any deviation from normal hearing, whether permanent or fluctuating, and ranging from mild hearing loss to profound deafness.

6) **Academic Performance-** Hearing impaired children are frequently handicapped in various degree of hearing loss and it effect on educational performance and particularly and particular handicapped in reading which relies heavily upon language skill.

Adjustment of social- Our social inter action depend upon communication so deaf children have communication problems that's why it should have problem of social inter action such children live in a world of isolation and from a group of their own ,an association of the deaf for their common interest and interaction.

Behavioral problem- Deaf learners feel invariable inferior and helpless in adapting to circumstances that require verbal communication. So regard non-verbal communication absence of verbal they have poor self poor concept which damages the development of personality.

"Check Your Progress" - 2

1) In normal hearing communication speech is normal and normal pattern of development with good auditory perceptive skills. In profound hearing loss donot rely on hearing for their communication. Language and speech develop only by training and they are educationally deaf. Communicate mostly through gestures, voice, inflection, articulation greatly affected. Required regular speech and language training regarding subject's expert.
2) Unilateral means pertaining to one ear only and Bilateral means pertaining to both ears.
3) There are of three major types of hearing loss. These are
- Conductive hearing loss - pertaining to the outer and middle ear
- Sensorineural hearing loss - pertaining to the inner ear only.
- Mixed hearing loss - pertaining to the outer/middle and inner ear.

4) There are three physical processing of hearing.Outer Ear,Middle Ear and Inner Ear.
5) Middle Ear.
6) Auditory nerve is VIIIth crenial nerve in brain.
7) Pure Tone Audiometry.

4.1.9 Unit End Exercises

1. Discuss the details about characteristics with of learner/ksf hearing loss
2. Discuss the details about different type of hearing impairmet and their communication.

Unit : 4.2 □ Language and communication issues attributable to hearing loss and need for early Intervention

Structure

4.2.1 Introduction

Man is a social animal, without society human just being is like animal. So human interaction with society with the help of verbal interaction and that involves speech,

language and communication. Speech, language and communication depend upon our hearing ability which is to perceive the sound about nature. But if suffering from hearing ability it has difficulty to perceiv the sound about nature and it affects verbal interaction and also affects speech, language and communication. Due to this problem child can face problems in several development areas these are personal-social, cognitive and academic. You will realize that language and communication are the two of such concepts and also including speech which are core issue in the special education. Hence a clear and descriptive idea of language and communication issues attributable to hearing loss and need for early intervention is necessary to know it in a better way as a teacher trainee and also as a human being.

4.2.2 Objective

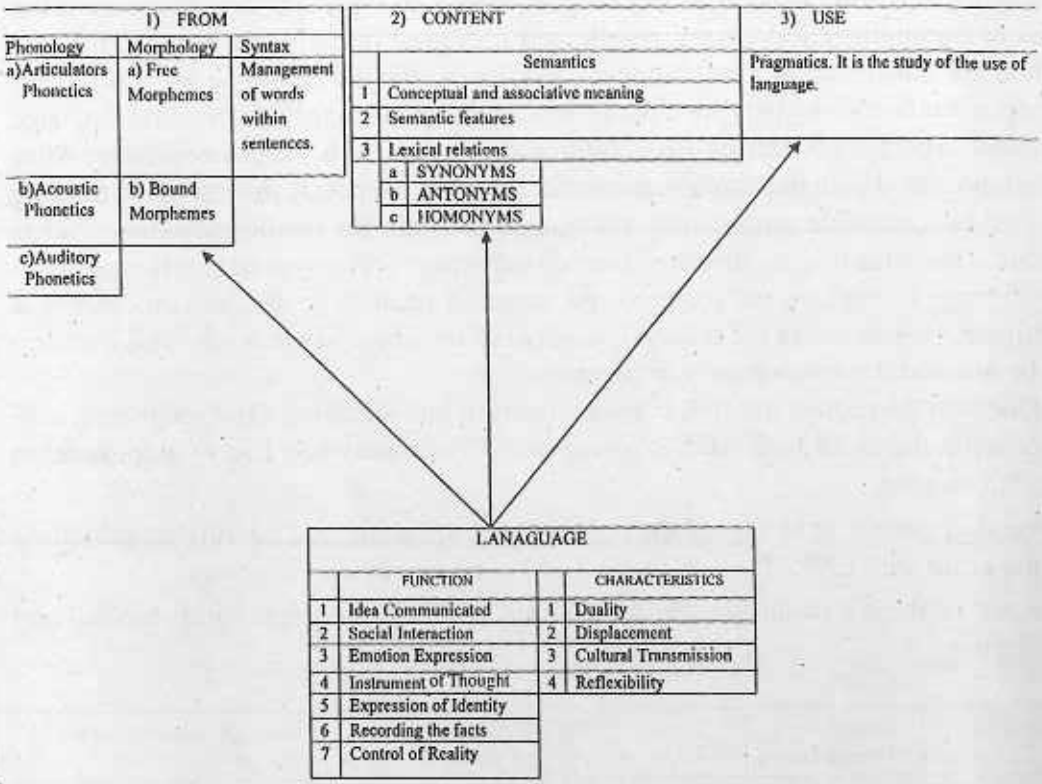
- To understand meaning of communication
- To know about different communication system, language and communication
- To know about different degrees of hearing loss and type.
- To understand to given in formation while language issue of hearing loss
- To understand able to given in formation while communication issue of hearing loss
- To understand the need for early intervention of hearing loss

4.2.3 Language issues attributable to hearing loss.

Language is a part of human life. It gives words to our thought, voice to our idea and expression to our feelings. It is a rich and varied human ability one we'can use without a thought that children seems to acquire automatically and that linguists have discovered to be complex yet describe. According to Chomsky, Language is a set of(finite or infinite) sentences, each finite in length and constructed out of a finite set of elements.

LANGUAGE COMPONENTS

Language component has three stages. These are:



LANGUAGE COMPONENTS

4.2.3.1 "Check your progress" - 1

What is Languge? Mention the component of language?

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4.2.3.2 To see how deafness creates language issues attributable to hearing loss.

Speech is an oral manifestation of language. Speech refers to the actual production of sounds making words. These sounds are produced by the coordination of facial muscles and the flow of air through the human voice box (larynx). Language refers to our complex system of symbol used to communicate. Man is the talkative animal that lives in language as a fish lives in water. Speaking is natural activity for a human being. Moreover, the

spoken word is the foundation of, all languages. While comparing the various aspects of language, one can conclude that ear language (spoken/oral aspect) and another is eye language (writing language). Ear language (spoken aspect) or oral language is the means of communication among people and it is used in daily life because it is the medium for conversation. Deaf student cannot perceive the sound about nature with the help of ear that's why they are already delayed to ear language which is oral language in spoken aspect. The hearing-loss-children do not learn to listen immediate. After they are provided with the amplification and exposure to speech and language training and with best possible amplification language learning for the hearing-loss-child is possible. This is the major concern of hearing impairment. The system to process speech and language is in place but required raw material for it to enable any processing is inadequate. How to revive the broken link between hearing and speaking? This question may be answered predominantly in two ways:

1) One way to restore the link between hearing and speaking (and language) is to provide the child with ACE (Appropriate Continuous and Early) amplification with training.
2) Another answer is to bypass the link between speaking and hearing by providing the child with ENR (Early Natural Rich) exposure to sign language.

The issue of these two answers and their mid points is complex, multi-faceted and challenging.

Hearing Level (dB)	Degree of Hearing Loss	Type	Missed Sounds	Language issues attributable
0-25	Normal	Normal	Normal	Normal
26-40	Mild	Conductive Sensorineural	25% - 40% speech signal, distant sounds, unvoiced consonants, plurals and tenses.	Misses 50% of class discussions, has problems in suppressing background noise.
41 -55	Moderate	Conductive/ Sensorineural	50% - 80% speech signal	Articulation deficit, limited vocabulary, learning dysfunction.
56-70	Moderately Severe	Sensorineural Mixed	100% of speech information	Delayed language syntax, atonal voice, reduced speech intelligibility
71 -90	Severe	Sensorineural Mixed	All speech sounds, can hear loud environmental noises	Speech not developed or deteriorates, learning deficits
>90	Profound	Sensorineural Mixed	All speech sounds, only feels vibrations	Speech not developed or deteriorates, learning deficits

4.2.3.3 Different degree of hearing loss and Language issues attributable

4.2.3.4 "Check your progress" - 2

1) What is the meaning of Ear language?

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2) What is the meaning of Eye language?

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3) What is the difference between children with mild hearing loss and those with profound hearing loss on language issues?

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4.2.3.5 Different degree of hearing loss and communication issues

We use the word communication very commonly and casually. What does it mean? Communication is an intentional two way complex process of sending message from one end to the other via a channel.

Have a look at the following examples :

1. Bulti writes a letter to Rishi.
2. Runa is unfolding the story of Shrikrishna through her Bharatnatyam.
3. Ananya saw red light at the signal and stopped her car.
4. Ashoke waves 'bye' to Prabir.
5. Saikat says, "Kishore please go to the bank".
6. Triptesh opens the door when the bell rings.
7. Mita teaches her students the 'Properties of Air' using the Indian Sign Language.
8. Sujata listens to the radio.

Which of these are examples of communicative events?

Yes, all the 8 are examples of communication. So Communication is a two way process of transfer of a message from one end to the other through a channel.

What happens in these 8 events, do fit into our definition of communication?

Now let us try to identify whether all events can be called language?

You are very sure of 1, 5, and 8 for being examples of language.

What about 7?

Indian Sign Language, (as suggested by its name) is a language and hence communication example number 7 must be categorized along with 1, 5, 8.

What about other examples 1, 2, 3, 4, 6 are communicative events but not examples of language.

Linguistic communication can take place through following three modes of communication:

1) Aural / Oral (listening / speaking)

2) Visual / Graphical (Reading / Writing)

3) Visual / Manual (Sign Language)

Again have a look at the list and point out the examples where speech is involved. Yes, 5 and are examples of speech.

While comparing the various aspects of language, one can conclude that ear language (spoken/oral aspect) and another is eye language (writing language) Oral language is the means of communication. So communication is a complex two ways and intentional process of passing the message from one end to the other using a channel

<table>
<tr><td rowspan="2">Encoder</td><td>Message</td><td rowspan="2">Decoder</td></tr>
<tr><td>Channel</td></tr>
</table>

Communication development and behavioral skills are influenced by a child's ability to hear. When hearing loss goes undetected or is detected late (after 6 months of age), language and speech development can be delayed. This delay can affect a child's social interactions, emotional development and academic performance.

dB level	Type of Impairment	Communication issues attributable
-0 to 25 dB HL	Normal Hearing	Speech and language normal and normal pattern of development with good auditory perceptive skills.
26-40 dB HL	Mild Hearing Loss	Speech and language developments are within normal limits. May exhibit occasional auditory perception problems some educational retardation likely.
41-55 dBHL	Moderate Hearing Loss	Language development and speech are mildly affected. Difficulty with rarely used words, minor differences in meaning of words and idioms, defective articulation but still intelligible speech loss quality and inflection almost normal. Reading and writing delayed. Vocabulary training, reading and writing to be special attended train addition to schooling.
56-70 dB HL	Moderately-Severe Hearing	Grammar, vocabulary, articulation and voice are affected understand in loud speech .Early speech is unintelligible. Even with hearing aids show difficulty in understanding. Reading and writing need special assistance.
7 1-90 dBHL	Severe Hearing Loss	Speech and language do not develop spontaneously. Sound produced very loudly at a distance of 1ft. and near the ear. The voice will be high-pitched and articulation distorted.
>90 dB HL	Profound Hearing Loss	They do not rely on hearing for their communication. Language and speech develop only by training and they are educationally deaf. Communicate mostly through gestures, voice, inflection, articulation greatly affected. Required regular speech and language training regarding subject's expert.

4.2.3.6 "Check your progress" - 3

1) What is communication, speech and language?

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2) Mention the mode of linguistic communication?

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3) What is the difference between children with normal hcaing and those with profound hearing loss on communication Issue?

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4.2.4 Early intervention

Many services and *programmes* will be available to you soon after your child's hearing loss is found. When a child's hearing loss is identified soon after birth, families and professionals can make sure the child gets *intervention services* at an early agc. Here, the term *intervention* services include any programme; service, help or information given to families whose children have a hearing loss.Such intervention services will help children with hearing loss to develop communication and language skills. There are many types of intervention services to consider. We will talk about *early intervention* and about *communication* and *language.* Some of the services provided to children with hearing loss and their families focus on these topics.So carly intervention services and choices it means communication and languages available for you and your child.

"Early intervention" means getting started as early as possible to address the individual needs of a child with disabilities. This is done to enhance the infant or toddler's development, to minimize the potential for developmental delay, and to enhance the family's capacity to meet the child's needs. Early intervention is a *system of services* established by the states through grants from the federal government to help eligible children from birth until their third birthday.

If your child was born with a hearing loss or has developed one before turning three, you may want to get in touch with personnel in the early intervention system in your area. The hospital staff may have already connected you with these services. If not, you may wish to ask your child's doctor.

Early intervention may be of help to your child and your family in many ways, including learning to communicate with each other. Early intervention programme will be assigned a *service coordinator* to help you understand the intervention system and make sure that your child gets the services to which he or she is entitled.

Valuable service systems available to you and your family are:

- ***State services*** such as early intervention (for eligible children up to the third birthday) and special education and related services (for eligible preschoolers and school-aged children).
- ***Organizations specializing*** *in hearing loss and deafness* that provide information and support.
- ***Resource and information centers*** that can offer information about national and state resources and education rights.
- ***Parent groups*** in which you can talk with other parents who also have children with hearing impairments or deafness.

2.4.4.1-Early Intervention for the Identified Population

The services/facilities available for early intervention in the country are covered under the following:

- Medical intervention
- Aids, appliances and cochlear implant.
- Auditory and speech-language training.

i) **Medical intervention-** There are two conditions that require medical intervention in school children. 1) Remove the wax.

2) Otitis media.

Otolaryn go legists being available only at the hospitals, the doctor manages the ear/ conductive hearing problem at the primary center. Anganwadi workers and other grass root level health workers are trained to handle acute ear pain, foreign body in the ear canal, etc. There are about 600 district hospitals in the country but not all may have ENT specialists or infrastructure for audiological assessment. The scenario is expected to improve as made budgetary provisions to meet the deficiencies and a 'medical kit' for grass root workers to attend to the ear problems.

ii) Aids, appliances and cochlear implant- Fitting appropriate hearing aids are a crucial step in initiating successful intervention especially in children with pre-lingual hearing impairment.

The status of availability of 'state-of-art 'hearing aids of all styles, makes and models (digital and analog) in the Indian market have improved to a great extent with the liberalization of the import policies. It is estimated that about 1.85 lakh hearing aids are distributed/sold annually. Of these, about 1.25 lakh body level aids are distributed under the ADIP scheme. The rest are either assembled or imported for sale in the country.

The Scheme of Assistance to Disabled Persons (ADIP) of Ministry of Social Justice and Empowerment, Government of India, provides Rs. 8,000 per aid per ear for the beneficiary. Binaural aids are provided to school- going children which may be replaced with new hearing aids every two years. Income for eligibility for fully and partially subsidized aids currently is Rs.6, 500 p.m. and Rs.6, 501 to Rs.10, 000 p.m. respectively. Solar battery chargers with two AA rechargeable batteries are also included for the beneficiaries. The cost of hearing aids is reimbursed for employees under ESI and CGHS schemes. Some of the State Governments have also made provision for distribution of free/subsidized hearing aids.

Cochlear implant is not an option by choice, but in terms of candidacy and cost (varying from Rs.5 lakhs to Rs.10 lakhs). Among the elite hearing impaired, cochlear implant is picking up well, especially in the prelingually deaf. Marketing strategies and the outcome of cochlear implant in the implanted children seem to have contributed to the popularity. Three popular brands of cochlear implant (Nucleus, Medel and Clarion) are marketed in the country. INS Ashwini Hospital, Mumbai have made provision for free cochlear implant for their beneficiaries.

Certain corporate houses also have donated funds to some private hospitals to help the economically weaker section. The outcome of cochlear implant is good (especially with the pediatric population) wherever a team of professionals is involved.

The network of hearing aid dealers of the major hearing aid manufacturers in the country have provision to supply the spares for the hearing aids (such as cords for body level aids, prebent tubes for BTE aids) as well the repair of the hearing aid. Repair facilities are available at the major training institutes, some NGOs and private practitioners. *Directory of Services* published by AYJNIHH. Mumbai provides more information on this issue.

The ear mould is the final link between the hearing aid and the ear. Custom made ear moulds are prepared only at institutions in cities and by some NGOs and private

practitioners. District Disability Rehabilitation Centers (DDRC) of Ministry of Social Justice and Empowerment has facilities for custom ear mould (website: *www.socialjustice.nic.in).* Facilities to make soft ear molds are available at some centers and with the hearing aid manufacturers/distributors.

(iii) Auditory and speech-language training- Available services are comparatively more in the urban than the rural sector; the caregivers from the latter sector can avail of demonstration therapy, with the objective of facilitating home training. Several early intervention centers run by parent groups continue to offer quality services. Special educators are also involved in auditory/speech language training though it remains the domain of the speech-language pathologists/audiologists.

Recognizing the importance of auditory/speech-language training for the cochlear implant recipients, the team approach has had a positive impact on the caregivers. An increasing number of special educators and caregivers have benefited from the workshops/training programmes in auditory/ verbal therapy organized by the manufacturers/ distributors of cochlear implants. A certificate course for the caregivers (of children with developmental disabilities) has been launched by AIISH, Mysore in collaboration with the RCI. To meet the special needs of the age group 0 to 5 years, orientation programmes of one-month duration aimed at manpower development are conducted at seven centers across the country by AYJNIHH, Mumbai in collaboration with Balavidyalaya, Chennai.

Availability of affordable educational material such as picture story books, puzzles, audio/video tapes, educational toys, attractive stationery items has improved due to the access, through internet, to pictures/material. Indigenously developed software and websites are also available for auditory training and speech-language training.

4.2.4.2 "Check your progress" - 4

1) What is Early Identification?

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2) What are the valuable services of early identification?

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3) What are the facilities available for early identification of hearing loss?

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4) What is full from of D.D.R.C./A.I.I.S.H./R.C.I./A.Y.J.N.I.H.H.?

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4.2.5 Let us Sum Up

- Human interaction with the help of verbal interaction and it involves speech, language and communication.
- These systems depend upon our hearing ability which perceives the sound about nature.
- Language is a part of human life and it three stages Form, Content, Use.
- Student with hearing loss cannot perceive the sound about the nature with the help of ear that's why delay ear language.
- With the help of best amplification system language learning may be provided children with hearing loss. But it depends on different degrees of hearing loss. So it is the. issue of language attributable.
- This language issue impact of communication issues of children with hearing loss and it also depends on type of hearing impairment.
- Early identification means hearing loss identified soon after birth in valuable service system.
- Early identification of hearing loss services are
  - Medical intervention
  - Aids, appliances and cochlear implant.
  - Auditory and speech-language training

4.2.6 Answer to "Check Your Progress"

"Check your progress" - 1

1. Acc to Chomsky, Language is a set of (finite or infinite) sentences, each finite in length and constructed out of a finite set of elements. There are three components of language from, content and use.

"Check your progress" - 2

1) Ear language means spoken oral language

2) Eye language means written languages

3) In case of mild hearing Loss 50% of class discussions is missed on language issues. They have problems suppressing background noise and is missed 25% - 40% speech signal, distant sounds, unvoiced consonants, plurals and tenses. In profound loss causes only is felt a vibration speech is not developed or learners face learning deficits.

"Check your progress" - 3

1) Communication is an intentional two way complex process of sending message from one end to the other via a channel.

   Speech is an oral and verbal manifestation of language.

   Language is a set of (finite or infinite) sentences, each finite in length and constructed out of a I finite set of elements. There are three component of language from, content and use.

2) Linguistic communication can take place through three modes these are

   - Aural / Oral (listening / speaking)
   - Visual / Graphical (Reading / Writing)
   - Visual / Manual (Sign Language)

3) In normal hearing causes communication issues like speech and language are normal and pattern of development is normal good auditory perceptive skills while in case of profound hearing loss they do not rely on hearing for their communication. Language and speech develop only by training and they are educationally deaf. They communicate mostly through gestures. Voice, inflection, articulation are greatly affected. Regular speech and language training are required with the help of subject's export.

"Check your progress" - 4

1) Early intervention means getting started as early as possible to address the individual needs of a child with disabilities.

2) There are many valuable service of early intervention. These are

- *State services* such as early intervention for eligible children and also up special education and related services for eligible preschoolers and school-aged children.
- *Organizations specializing in hearing loss and deafness* that provide information and support.
- *Resource and information centers* that can offer information about national and state resources and education rights.
- *Parent groups*, in which one can talk with other parents who also have children with hearing impairments or deafness.

3) The facilities available for early intervention in the country are covered under the following:

(i) Medical intervention (ii) Aids, appliances and cochlear implant, (iii) Auditory and speech-language training.

4) D.D.R.C.-District Disability Rehabilitation Centers

A.I.I.S.H.-All India Institute of Speech and Hearing.

R.C.I.-Rehabilitation Council of India

A.Y.J.N.I.H.H.-Ali Yavar Jung National Institute for Hearing Handicapped

4.2.7 Unit End Exercise.

1. Discuss the details about language attributable of hearing loss student.
2. Discuss the details about communication attributable of hearing loss student.
3. What is early intervention? Who are the service provides of early intervention Explain in details.
4. What is language? Discuss the details of language components.

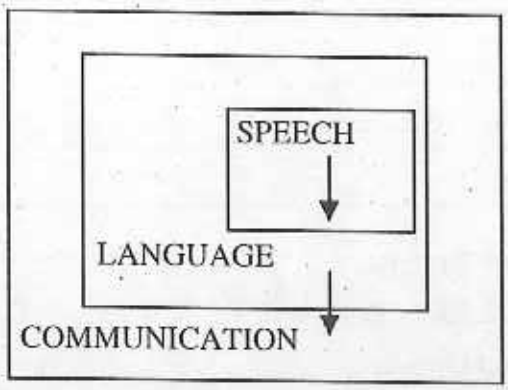
Unit: 4.3 □ Communication options, preferences and facilitators of individuals with hearing loss.

Structure

4.3.1 Introduction

Communication is the process of exchanging and sharing information through idea and opinions. Most often this exchange is via language. Language consists of symbol ordered in particular sequences for the purpose of conveying information. The symbol of language mainly consisting of used communication can be carried out in different ways. The term communication is often used to include only the spoken word that is speech and hearing. A communication option, mode, modality, or method is the *means* by which the child and family receive and express language. The choice of a communication modality that facilitates language development and allows the child who is hard of hearing or deaf to readily engage in communication interchanges with

family and caregivers is a primary issue throughout childhood. So in this unit we know about the communication options, preferences and facilitators of individual of hearing loss.

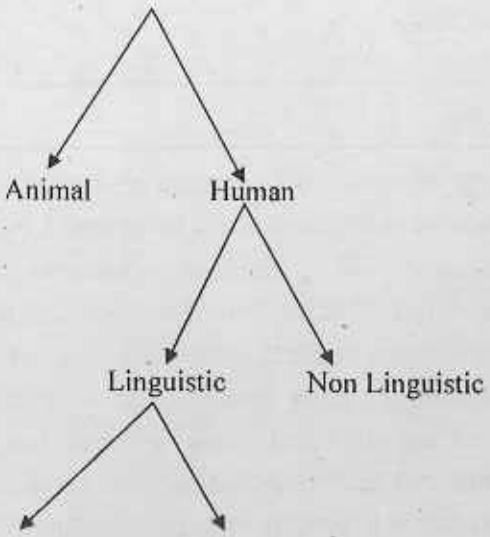


4.3.2 Objective

The Student-Teacher will be able to understand

- the meaning of communication option
- the different communication system modes and method.
- the communication option available for children with hearing impairment.
- the communication preferences available for children with hearing impairment,
- the communication facilitators available for children with hearing impairment,

4.3.3 Communication System



	Modes (Four modes)		Methods (Three methods)
1	Aural/Oral(Listening/Speaking)	1	Oralism
2	Visual/Graphical(Reding/Writing)	2	Total Communication
3	Visual/Manual(Sign Language)	3	Education Bilingualism
4	Speeech reading		

Modes : There are four modes of linguistic communication. These are

Aural/Oral (Listening/Speaking) mode is the common mode used for communication by hearing population. It develops automatically and naturally in the non-impaired and it is acquired in early years in life and its basic purpose is for routine communication.

Visual/Graphical (Reading/Writing) mode is the mode secondary mode because it is a learnt skill as against the acquired skill of aural/oral mode. It is learnt, formally and is command is acquired in later years of life and its purpose is official/educational.

Visual/Manual (Sign Language) used by people with hearing impaired and is not a mear collection of signs but a rule governed language with its own grammar.

Speech reading is fourth mode and play supportive roles to the earlier modes. It does not have the potential to carry the message in totally, hence cannot function on its own independently.

Methods: There are three methods of linguistic communication. These are

One mode (out of the two) and one type of language (out of two) can be selected and the combination of these two is called the methods of communication. There are three methods of communication possible.

Oralism- Oralism is philosophy which desires to develop verbal language through aural/oral mode. Modern oralists believe that that attempts should be made to break through the barrier to communication caused by deafness.

Total communication- Total communication in simple words means the use of sign as well as speech in order to develop spoken language of the deaf children. Garretson (1976) defines total communication in the following way a philosophy incorporating appropriate aural, manual and oral modes of communication in order to ensure effective communication with and among hearing impaired persons.

Education Bilingualism- Education Bilingualism is generally considered to be a reaction against oralism as well as total communication. Bilingualism with total communication that oralism can never work with profound deaf students but it is equally critical of total communication that combining sign with verbal language will bring speech to child. So fundamentally the bilingual approach is that the first language of all deaf children could be the sign language which belongs to deaf community of the concerned

2.5.3.1 "Check your progress" - 1

1. Metion any two modes of linguistic communication?

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2. Mention any two methods of linguistic communication?

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3. What is total communication?

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4. What are the meanings of Aural and oral?

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5. What is oralism?

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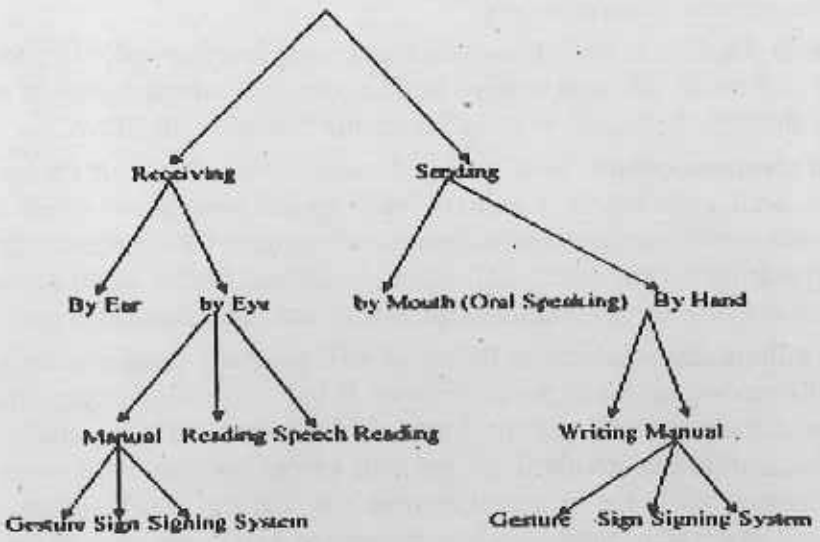
4.3.4 Communication Option



4.3.4.1 Communication Options Available for Use by Children with Hearing Loss

Option/Feature	Familial Role	Amplification
Auditory-Verbal Maximizes use of residual hearing to develop spoken language. Auditory channel is primary input mode exclusively during language learning experiences and therapeutic intervention. The stricts use of visual cues, speech reading and signs. Provides only auditory training	Serve as spoken language models Provide abundant opportunities for spoken language learning through Auditory- Verbal techniques in the home environment. Seek professionals support from those knowledgeable in AV approach. Ensure appropriate audiologist management. Monitor rigorously the performance of amplification/cochlear implant technology. Desire mainstream educational setting & inclusion in hearing community as primary goal.	Provide early amplification Provide maximum audibility across the speech -frequency range Promote consistent use of hearing aids. FM systems and/or Cochlear Implant
Auditory-Oral Maximizes use of residual hearing *and* speech reading to develop spoken language. Use of both auditory and speech reading encouraged during language learning and therapeutic experiences. Provides both auditory and speech reading training	Serve as spoken language models Provide abundant opportunities for spoken language learning using auditory and speech reading input in the home environment. Arrange for appropriate Auditory -Oral programs/professionals. Ensure appropriate audiology management. Monitor rigorously the performance of amplification/ cochlear implant technology. Desire mainstream educational setting & inclusion in hearing community as primary goal.	Provide early amplification Provide maximum audibility across the speech-frequency range Promote consistent use of hearing aids, FM systems and/or Cochlear Implant.

Cued Speech Makes spoken language visible through use of specific hand shapes, positions and lip reading (i.e., cues).	Learn and become fluent in Cued Speech Provide abundant opportunities for spoken language learning cueing all communication interactions with the child in the home environment. Support use of Cued Speech by early intervention personnel, teachers and all others communicating regularly with child. Arrange for appropriate educational settings or Cued Speech transl iterator Determine desire for child to use amplification or cochlear implant technology.	Amplification not necessary for spoken language acquisition Provide maximum audibility across the speech-frequency range when family desires child to use amplification or cochlear implant
Manually Coded English (MCE) Uses sign system and finger spelling to represent spoken English. Often used in conjunction with Total Communication and Simultaneous Communication.	Learn and become fluent in manual sign system (MCE). Arrange for appropriate educational settings. Professionals who are fluent users of MCE system used by the child or interpreter.	Amplification not necessary Provide maximum audibility across the speech-frequency range when family desires child to use amplification or cochlear implant
Total Communication Uses multiple methods simultaneously (manual, oral, auditory) Uses MCE system	Learn and become fluent in manual sign system (MCE). Encourage speech reading and use of audition in combination with sign (MCE). Arrange for appropriate educational setting/TC professionals who are fluent in TC and support use of sign, speech reading and audition. Ensure appropriate audiologist management.	Provide amplification early amplification Provide maximum audibility across the speech-frequency range Promote consistent use of hearing aids, FM systems and/or Cochlear implant.
Simultaneous Communication Use sign system and finger spelling and speech. Does not require use of audition.	Learn and become fluent in manual sign system. Encourage speech and sign. Arrange for appropriate educational setting; may be the same as TC. Ensure appropriate audiology management when required.	Amplification not generally used for communication as part of approach.

Bilingual-Bicultural (Bi-Bi) Philosophy of language learning: first ASL, second spoken languag (e.g., English) Combines ASL and form of spoken language (MCE, Cued Speech) Opportunities for experiences in Deaf and hearing communities.	Learn and become fluent in ASL Ensure regular interaction with members of Deaf and hearina culture/community Arrange for appropriate educational setting in program supporting Bi-Bi philosophy.	Amplification not required for visual language learning. Amplification/CI may be used for alerting, warning, awareness of environmental sounds and for support of spoken language development

4.3.4.2 "Check your progress" - 2

1. Mention any two communication options availablechildren with hearing impairment?

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2. What is cuae speech?

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3. What is full from of A.V.T.?

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4.3.5 Communication Preferences of individual of hearing loss.

Hearing—Listening capability of our hearing system. So speech, language and communication these systems depend upon our hearing ability which perceives the sound about nature. But if suffering from hearing disability it has difficulty to perceive the sound about nature and it affects verbal interaction and also affects speech, language and communication. Due to this problem child can face problem in several development areas. These are personal-social, cognitive and academic.

Conversation – The use of speech and/or sign for informal exchange of views, ideas or information.

Alphabetic Principle – The use of letters and letter combinations to represent phonemes and/or signs in a system of writing.

Vocabulary – The words we must know to communicate effectively.

Fluency – The ability to read a text quickly and accurately with ease and expression.

Comprehension - The process of constructing meaning from print.

Writing – Communicating through the use of written symbols.

Gesture – It is the meaning of a movement of parts of the body especially a hand or the head to express an idea or meaning.

Singing- It is a large body literature and also composes hand shapes, locations and motions. Addition facial expression and also classifier is a specific hand shapes that can represent a particular person and project.

Facial expression- It is facial literature use to non-verbal communication to facial express.

4.3.5.1 "Check your progress" - 3

1. What is conversation?

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2. What is gesture?

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3. What is singing?

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4. What if facial expression?

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4.3.6. Communication facilitators of individual of hearing loss.

The Selection of a Communication Option for Children with hearing loss.		
SL.NO	Facilitators	Consideration
1	Language used in the home	Spoken Bilingual (use of 2 spoken languages) Visual (ASL) Combination of visual and spoken (bilingual)
2	Family Involvement	Abundant opportunities for language learning and communication in the home. Level of participation in intervention Home situation/ family membership and other demographic factors Consistency in learning & using MCE. ASL. cued speech Socio-economic circumstances Work schedules
3	Age of Identification & Intervention	Before 6 to 11 months of age After 6 to 11 months of age
4	Literacy	Speech perception Development of phonological awareness
5	Community resources	Availability of certified AV therapists; auditory-oral therapists, sign language interpreters, ASL community, transliterations etc. Availability of EI (Educational Intervention)programs that use above approaches
6	Hearing status	Degree of hearing loss Stability of hearing loss Repeated episodes of OME(Ottis Media Infection)
7	Hearing Aids & Cochlear Implants	Consistent use of Hearing Aids/FM system Cochlear implant candidacy Financial constraints related to acquiring assistive device technology Expectations regarding benefits of device
8	Speech Intelligibility	Access to acoustic speech features through hearing aids/cochlear implant Speech therapy
9	Presence of additional disabilities	Visual Motor Cognitive Attention/Behaviour
10	Availability of later educational options	Mainstream with support services Self contained classroom Special school Residential facility

4.3.6.1 "Check your progress"- 4

1. Mention any three communication facilitators of individual with hearing loss?

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4.3.7 Let us Sum Up

- Communication is a complex, two way intentional process of transferring a message from one end to the other.
- There exist several communication systems which could be classifld into human versus animal communication and linguistic versus non-linguistic communication.
- There are four modes of linguistic communication (listening/speaking, reading/ writing/ sign language/ system, speech reading)
- There are three methods of communication existing in the education of the deaf and oralism, T.C. and Educational Bilingualism
- Communication Option of children with hearing loss
- Communication of preferences for children with hearing loss
- Communication facilitators of children with hearing loss

4.3.8 Answer to Check Your Progress

"Check your progress" - 1

1. Aural/Oral (Listening/Speaking), Visual/Graphical (Reding/Writing), Visual/ Manual (Sign Language) and Speech reading
2. Oralism, Total Communication and Education Bilingualism
3. Total communication in simple words means the use of sign as well as speech in order to develop spoken language of the deaf children. Garretson (1976) defines total communication in the way of philosophy incorporating appropriate aural, manual and oral modes of communication in order to ensure effective communication with and among hearing impaired persons.
4. The meaning of aural listen ear and oral means verbally,

5. Oralism is philosophy which desires to develop verbal language through aural/ oral mode that's called as oralism.

"Check your progress"-2

1. Auditory- Verbal, Auditory-Oral and Total Communication
2. *Cued speech* is spoken language visible through use of specific hand shapes, positions and lip reading i.e., cues.
3. Auditory Verbal Therapy.

"Check your progress"-3

1. The conversation is use of speech and/or sign for informal exchange of views, ideas or information.
2. It is the meaning of a movement of parts of the body especially a hand or the head to express an idea or meaning.
3. It is a large body literature and also comprises hand shapes, locations and motions. Addition facial expression and also classifier is a specific hand shapes that can represent a particular person and project.
4. It is facial literature use to non-verbal communication to facial express.

"Check your progress" - 4

1. Language used in the home, family involvement, age of identification & intervention and literacy.

4.3.9. Unit End Exercises

1. What is communication? Describe the details of communication system.
2. Describe the details of the communication option/feature available for children with hearing impairement and their family role.
3. Describe the details about communication preferences and facilators of individual with hearing loss.

Unit : 4.4 ☐ Issues & measures in literacy development and scholastic achievement of students with hearing loss

Structure

4.4.1 Introduction:

Literacy skills are essential for succeeding in our today's society. Everyday examples include accessing the Internet or messages via e-mail; reading instructional manuals

for the workplace, for computers, for cars, directions at work, for travel, or for taking medications; and for leisure activities such as reading the newspaper or enjoying a magazine or a book. Literacy is also the key to functioning effectively in school. For most individuals the foundation for reading proficiency begins in infancy, advances with formal reading instruction in school, and continues to increase as the result of quality educational, social and recreational experiences throughout one's lifetime but without well-developed literacy skills students cannot participate fully in classroom learning. Students are at much greater risk for school failure and lifelong problems with employment, social adjustment, and personal autonomy so literacy skills are vital at a national level. But the problems are galore for administrators, educators, and families who work or live with students who are deaf or hard of hearing for the purpose of methods of instruction. Hearing loss has nothing to do directly with literacy development and functioning; in most of the cases of deafness, literacy does get negatively impacted. This is due to basic inadequacies of language and communication. In this part we are going to see what are the issues & measures in literacy development and scholastic achievement of students with hearing loss.

4.4.2 Objective

The student and teacher will be able to-

- understand issue of literacy development of students with hearing loss.
- understand issue of literacy development in reading writing steps in hearing impaired student.
- under stand measures for literacy development of students with hearing loss.
- understand scholastic achievement of students with hearing loss.

4.4.3 Literary development of students with hearing loss.

The development of literacy hearing impairment children is not a multifaceted issue. It is possible to find a good number of parallels to literacy development in their hearing peers. Current millennium still reports that children with hearing loss are often severely delayed when compared to hearing children, especially in earlier development. Adolescents with hearing loss are still seen to have multifaceted problems involving literacy (reading and writing) and language that can influence their attitude to their ability to access and use academic information. This also has implications for how they regard academic information and whether they are willing to apply it. If adolescents

with hearing loss are able to access and use academic information sufficiently, they will be able to fulfil a more significant role in society, as well as *01* to study and work well. The acquisition of academic information will enable adolescents with hearing loss to function in such a way that they will be able to maintain their independence and improve their knowledge base throughout their education years. According to Briggle (2005) some class activities that are beneficial to hearing impaired or deaf children includes:

1) Time to explore writing, drawing, books and environmental print
2) Story time translated in to sign
3) Journal writing using invented spelling.

Like hearing peers,hearing impaired or deaf children should have the opportunity to participate in literacy events. They should also use written language in many ways that are typical to their hearing peers. According to Briggle (2005) and Williams (1994) the teacher should provide them with the opportunity of demonstrating the following uses of languages in signed or spoken from:

1) To interact socially with peers and adults while writing.
2) To provide information about written text.
3) To label written creations.
4) To monitor the construction of text.
5) To request assistance with writing tasks from adults and peers,
6) To challenge others' knowledge of literacy, and
7) To evaluate literary works.

4.4.3.1 "Check your progress" - 1

1. What is the multifacetd problem children with hearing impairment?

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4.4.4. Issue of literacy development of students with hearing loss.

Children with hearing loss now compete favourably with hearing peers in some issues. The following areas are

1) Children with hearing loss who evidence language delays also demonstrate significant delays in development of theory of mind. So theory of mind development is dependen child's opportunity for social interaction auditory comprehension, ver on a communication and play.

2) Oral language acquisition remains a challenge for children with hearing loss and also affects in reading. (Easterbrooks & Baker, 2002). Reading outcomes are well below average for 96% of children with hearing loss, most reaching only fourth to sixth grade proficiency (Karchmer, M.A. & Mitchell.R.E.2003). The 19th International Congress on Education of the Deaf (ICED) brought together 1,067 teachers, administrators, and researchers from 46 countries to address topics in education. The publication resulting from the conference noted that while academic outcomes improve with more hearing peers, social language use and the ability to make friends with hearing peers remain as problems for children with hearing loss in mainstream educat.onal settings (Leigh, G & Power, D 2004).

3) Sensory-motor concerns are related about literacy development of students with hearing loss. Children with sensoy neural hearing loss appear to experience higher rate difficulty with vestibular processing when compared with their typically developing peers, resulting in delays and/or compensatory strategies in their development , motor skills, such as balance, coordination, and body and spatial awareness (Suarez e 2007).

4) Kluwin, T.M. Stinson, M.S. and Colarossi, G.M.(2002) identified four main areas issue of concern for children with hearing loss when compared with hearing peers. They are :

   a. Social skills,

   b. Interaction/participation,

   c. Sociometric status/acceptance,

   d. Affective functioning.

5) Another and most important issue differences between normal and children with hearing loss. Children with hearing loss have been consistently documente areas of balance, complex motor sequencing, sensory, and vestibular processing.

6) Children with hearing loss are more likely to experience co-morbid diagnoses, such as apraxia and attention disorders and also auditory deprivation may lead development of specific motor and language skills that share common cortical processes.

7) Literacy (reading and writing) issue is traditionally regarded as the most important skill area needed to obtain academic information and also involved it the communication of thoughts and process of learning through conversation, reading, writing and the conceptualization of the reading process.

8) The educational outcomes for hearing impairment^ in secondary schools in normal mainstreaming after leave the school prepared to live and function independently should be able to independent living skills, employment readiness, and a set of 'learning how to learn' skills.

4.4.4.1 "Check your progress" - 2

1. What do/mean by vestibular processing?

.....

.....

2. Mention any two issue literacy development of students with hearing loss?

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4.4.5. Measures for literacy development of students with hearing loss.

Language based reception / expression of ideas and thoughts achieved by the medium of a shared script, which reflect shared language, context and the world knowledge. This means, reading / writing is not mere understanding and creation of script. Reading / writing is not conversion of spoken thoughts into a graphical thought. It is understanding and creation of independent thoughts. Sharing the script in itself is extremely essential but is not the only essential prerequisite in the process of writing

(and reading). Writing is much more than penning down a set of alphabets on paper. For example, read the following sentence:

Ich bin Lehrerin Van Beruf

This sentence uses Roman (English) script, which you already know. Could you understand the meaning? No, because sharing a script with the writer is not enough for you as a reader. You do not share German language with the writer and hence meaning is inaccessible for you. If a sentence is:

I am a teacher by profession

You will be able to read (understand) the sentence because you not only know the script but also share the language. Thus reading and writing is not possible without the adequate, age appropriate knowledge of the language for which the script is used. Hearing loss impacts language development and language functioning. As a result, very often the student with hearing loss has inadequate language. This inadequacy of language in turn impacts the literacy skills of the student with hearing loss.

4.4.5.1. Tips to develop Measures for literacy Skills in Students with Hearing Impairment

Literacy means independent reading (comprehension and not mere loud pronunciation of the text) and independent writing (expression of thought and not mere copying or penning down memorized lines). Student with hearing impairment have to be taken from guided / assisted literacy skills to independent literacy skills. Languages in the first point are true with literacy and literacy is experience and context bound. If it is developed through pleasurable activities / games / exercises students / with hearing impairment learn it more readily. The best method to develop reading / writing in student with hearing loss is to expose them to written material which is graded as per their levels. This material should be able to take them one step ahead in complexity. Reading / writing material may include readymade and custom-made materials like:

- Text books (of all the school end examination boards);
- Story books / comic books;
- News paper, magazines;
- Personalized notes to teachers / parents / classmates;
- Captioned movies;
- Greeting cards;

- Advertisements
- Manuals of phones, ovens, washing machines etc;
- SMS text messages;
- Rules of games;
- Road maps;
- Recipes;
- Railway / airplane / bus tickets:
- Matter on packed food / grocery;
- Menu card
- Joke books;
- Encyclopedia;
- Bill boards / banners / hoardings;
- Instruction boards at gardens, theatres etc.;
- Telephone / electricity bills;
- Purchase receipts;
- Registers and records;
- Specially created albums with written material;
- Specially created scrap books / experience books;
- Specially created vocal books;
- Daily diary etc.

Although reading and writing are closely linked but these cues are separate process.

4.4.5.2. Reading activity: Step-1 (Unseen/ in experienced passage)

- Sit with the student.
- Read a particular number of lines as per the level of the students and either read together silently or let the student read after you.
- Discuss the matter and encourage him / her to ask, answer, describe, comment, agree / disagree etc. on the matter and it will be produced on total communication system.

- Explain new concepts with the help of real object and dramatization.
- Show similar and smaller examples of sentence types.
- Ask questions to ensure he / she has not missed the details.
- Link the information with previous knowledge.
- Repeat the steps with next few lines.

4.4.5.3-Reading activity Step- II

In step I we made the student with hearing impairment read the lines first and then explained the content. In **step II** the teacher first develops the context by telling what the lines are about in. Explain a few concepts discuss with the child and then let him / her read the lines. **Both step I and step I and step II are** good tools of learning and both have strengths and hence students should be exposed to both.

4.4.5.4. Dos and Don'ts for better reading activities:

- Reading material should not restrict to word level, it should be in sentence form and key word could be highlighted with underline, colouring etc.
- Never work on vocabulary lists without context.
- Never over-do speech correction while the focus of the activity is reading.
- Be tolerant of mistakes. When students hesitate going on to complex level.
- Reading does not always mean understanding every bit of the written matter. Overall understanding too helps many times.
- In pre-school level Children should be encouraged the habit of scanning picture books, flipping comic books, sitting together to read magazines etc. This builds readiness before the child starts learning the actual reading.
- Link reading activities with school subjects. Reading activities can be used in both the ways to reinforce learnt knowledge or to build readiness for the knowledge to be learnt. This is important for student/with hearing loss since it helps him/her in understanding school subjects and also in developing reading.

4.4.5.5-Writing:

(1) To provide ample opportunity to the child to write his/her own thought.

(2) Link development of writing with reading, listening - speaking (or signing), context and experiences. Teachers always want to make tasks simpler for students and simplest way to make tasks simpler is to link it with meaning and context. Teaching writing for that matter, teaching anything without context or pragmatic background cannot have good results in the long run.

(3) In order to facilitate learning use of feedback is an essential factor. This in turn needs to be responded with feedback comprising

- Clear
- In detail
- Indicative of higher expectation
- Appropriate
- Immediate
- In writing
- Consistent
- Objective
- Pro-active

(4) Writing should be enjoyable and communication oriented rather than task-oriented.

(5) Develop the habit of self-editing. Many times, looking at the writings of the children one can hardly know his / her current level of language competency. The teacher is confused about whether an error committed by the student is an error of accidence or is an outcome of incorrect knowledge of language. If the children are made to edit their own writing, correcting their inner language structures becomes possible. Initially teachers can mark the sentences, parts where modification is required. This can work as a clue to help him/her edit the overall write up.

(6) Carry out assessment of writing. Separate writing assessment needs to be carried out by the teachers on regular basis. Assessment of language or assessment of language text book cannot be considered as writing assessment. There is a difference between assessment of language through writing and assessment of writing. Like any other ideal assessment, writing assessment too has to be carried out systematically, consistently and objectively.

(7) Involve parents in the process of writing development. As said earlier, writing needs to be developed in connection with context and real life situations. Home environment is rich from this point of view. Providing training to parents on follow up activities on development of writing is highly recommended.

4.4.5.5.1 "Check your progress" - 3

1. Mention the steps of reading activity for students with earing impairment?

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   .....

2. What is literacy?

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3. Name two ways for developing reading skill of children with hearing impairment?

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4.4.6 Scholastic achievement of students with Hearing Loss.

The scholastic achievement of students with hearing loss is one of the most important determinants of recipient's quality of life after schooling. The scholastic achievement of students with hearing loss attending the mainstream schools and to compare their scholastic performance to their normal hearing peers. So scholastic performance in mainstream school is a most important factor. The factors are:

- **Language and speech-** The ability to learn language and speech is the highest development of children hearing impaired.
- **Intellectual ability-** Process of thinking of deaf children and that normal peers are found to be (& similar also cognitive abilities and develop verbal intelligence.
- **Academic Performance-** Hearing impaired children are frequently handicapped in various degree of hearing loss and it affects educational performance and particularly reading which relies heavily upon language skill. So after scholastic achievement hearing loss student can develop the academic performance.

- **Adjustment of social** Our social inter action depends upon communication. So deaf children have communication problems. That's why it should have problem of social inter action. Such children live in a world of isolation and form a group of their own, an association of the deaf for their common interest and interaction. So after scholastic achievement student with hearing loss can develop on adjustment in social inter-action.
- **Behavioural problem-** Deaf learners feel invariably inferior and helpless in adapting to circumstances that require verbal communication. So regard non-verbal communication absence of verbal they have poor self poor concept which damages the development of personality but with the help of mainstream education which is scholastic achievement they develop the personality and is reduced the problem behaviour regard various social academic aspect.
- **Socially handicapped** - Learners with hearing loss cannot adjust with society because they suffer from communication difficulty and fail to understand what others hearing people say. But after scholastic achievement with the help of mainstream they develop communication skill and mixing the oral social which is social of communication and reduced of socially handicapped.
- **Problem in personal and social development-** Language becomes a barrier for deaf learner for purpose of communication with others. So this affects the socialization process and plays a vital role in the personal and social development of hearing loss learner. So with the help of scholastic achievement in mainstream in regular class room it develops the normal peer acceptance and reduces the problem in personal.
- **Personality problem-** Hearing difficulty may create personality problem. A becomes deaf learners more frustrated as he/she tries to reach the level of the normal and a totally deaf child seems reconciled to his fate But given well provided adequate facility of language and communication regard literacy development in regular school they develop their personal adjustment and well developed scholastic achievement in hearing impaired studens.
- **Provided in natural and social environment-**For a child with hearing loss to scholastic achieve developmental synchrony even development across the developmental domains programs need to provide a richer, more natural social environment and consistent exposure to hearing peers who can model age-appropriate language and social development.

- **Mainstream Placement-** Another choice commonly made for children with hearing loss is mainstream placement. The term *mainstreaming* is used to refer to the placement of regular education classes based on their skill level. Mainstream education does seek to educate the "whole child" and provide exposure to many preschool programmes. However, many schools turn to more directive teaching models by kindergarten wherein children sit at desks, teachers instruct, and children acquire facts, skills, and concepts through drill and practice.

4.4.6.1 "Check your progress"-4

1. Mention any two issue scholastic achievement of students with Hearing Loss?

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4.4.7 Let us Sum Up

- Hearing loss is a disability which affects literacy and it is a multifaceted issue.
- Literacy issue is the most important skill area to obtain academic information of hearing impaired studens.
- Literacy issue depends on communication and communication is the most significant process.
- After literacy development students with hearing loss should achieve in the respected of different formal area in mainstream placement.

4.4.8 Answer to "Check Your Progress"

"Check your Progress" - 1

1. The multifaceted problem children with hearing impairment involvement literacy issue which are reading, writing and also language that can influence their attitude to their ability to access and use academic information.

"Check your progress" - 2

1. Vestibular processing means the areas of balance motor coordination, complex motor sequencing.

2. Children with hearing loss who evidence language delays also demonstrate significant delays in development of theory of mind so theory of mind development is dependent on a child's opportunity for social interaction auditory comprehension, verbal communication and play.

Sensory motor concerns are also related about issue literacy development of students with hearing loss. Children with sensor neural hearing loss appear to experience higher rates of difficulty with vestibular processing when compared with their typically developing peers, resulting in delays and/or compensatory strategies in their development of gross motor skills, such as balance, coordination, and body and spatial awareness.

"Check your progress" - 3

1. Class room situation and teachers should develop the contents of text books.
2. Literacy means independent reading (comprehension and not mere loud pronunciation of the text) and

- Discuss the matter and encourage him / her to ask, answer, describe, comment, agree / disagree etc. on the matter and it will be produced on total communication system.
- Explain new concepts with the help of real object and dramatization.
- Show similar and smaller examples of sentence types.

"Check your progress" - 4

1. Language and speech- The ability to learn language and speech is the most important development of the hearing impairment.

Academic Performance- Hearing impaired children are frequently handicapped in various degree of hearing loss and its effect on educational performance and particularly and particular handicapped in reading which relies heavily upon language skill so after scholastic achievement hearing loss student can develop the academic performance.

4.4.9 Unit End Exercises.

1. Describe the details about issue of literacy development and scholastic achievement of students with hearing loss.

Unit : 4.5 □ Restoring techniques using human (interpreter) & technological support (hearing devices)

Structure

4.5.1. Introduction

The modern world presents many challenges of very different types. Our senses are constantly being assailed with new sensations, environments, and experiences. We have to develop coping strategies that allow us to move with confidence and deal with these challenges without becoming overwhelmed. For many of us, that is a significant task. For others, particularly those with a disability, it is a monumental challenge. Deafness is often described as 'the silent disability' because it is not noticed, not visible and not discussed, yet it is a condition growing in importance and prevalence. People who are hearing impaired and hard of hearing face many challenging hearing environments every day. They face obstacles in most areas of their lives. These are education settings, the workplace and social situations.

- In education settings, miscommunication can result in poor grades. Educators can be unaware that students have not heard the correct instructions, and mislabel children with hearing loss as 'lazy' or 'stupid.'
- In the workplace, people with hearing loss have more difficulty in finding employment and struggle with certain practical aspects, such as attending group meetings or answering the telephone.
- In social situations, hearing people cannot see that a person with hearing loss has difficulty hearing others, and also forget that hearing aids and cochlear implants are only aids. They need to be constantly reminded to consider the hearing difficulty, which can be tiring, frustrating and embarrassing. It can become easier

for a person with hearing loss to withdraw from social events and isolate themselves.

4.5.2. Objective:

The student -teacher able will be able to understand-

- Restoring techniques using human (interpreter).
- Restoring techniques using Technological Support (Hearing Device).
- Auditory training.

4.5.3. Student who are hard of hearing face obstacles in most areas of their lives

Deafness refers to the inability to hear, either totally or partially. Symptoms may be mild. moderate, severe or profound. Deafness may occur at birth or may be acquired due to various diseases, infections and or ageing. There are various strategies to enable these people to compensate for their deafness so that they can communicate with human interpreter such as lip-reading, sign language and use hearing devices such as hearing aids and also cochlear implant. When they use lip-reading, sign language and use hearing devices that means loss of normal hearing (normal hearing is restored) and using the restoring technique (human interpreter) &technological support (hearing device) and also auditory training. So restoring techniques are

(1) Human interpreter (lip-reading, sign language, communication worker)

(2) Technical support (hearing device/amplification option)

(3) Auditory training.

4.5.4. Restoring Techniques Using Human Support:

- Attract the student's attention before speaking and make sure you are facing him/her.
- Speak clearly; but avoid speaking artificially slowly, exaggerating your lips, or shouting as this affects the natural rhythm of speech.
- Make use of natural gesture and facial expression as a clue to meaning.

- Make sure that there is adequate light on your face. Do not stand with your back to windows.
- Position the student so that he/she can lip-read you easily and see the projector or board and as much of the class as possible if there is to be a group discussion.
- Make use of visual material, i.e. handouts, key vocabulary, diagrams, written instructions.
- Indicate when you are changing the subject.
- Check comprehension; encourage and direct questions.
- Keep background noise to a minimum.
- Write important new words on the board to fix their form.
- If using DVD/video for teaching purposes, be aware that the student will not be able to follow the soundtrack and will need to borrow the DVD/video or have access to subtitles or a transcript.
- Direct the student towards any relevant course materials on Blackboard.
- Ensure that members of the group raise their hand before speaking, so that the deaf student is alerted to a change of speaker.
- Do not allow more than one person to speak at a time.
- Be aware that a deaf person cannot read or take notes at the same time as lip-reading-allow time for a student to look at the relevant section of a handout, then make sure you have his or her attention before you comment on it.

Lip speakers are useful for those who do not use sign language but who find a tutor or lecturer difficult to lip-read. A lip speaker repeats the words of the speaker without voice. They produce clearly the shape of words, the flow, rhythm and phrasing of natural speech and repeat the stress as used by the speaker. The lip speaker also uses facial expression, natural gesture and finger spelling (if requested) to aid the lip reader's understanding. Lip speakers are used by people who use lip-reading extensively and who have a good command of English language.

Interpreters are used by students who prefer to communicate through British Sign Language (BSL) or Sign Supported English. The interpreter will translate what is said by the lecturer or tutor into sign and will provide a voice over for the deaf student's own signed contribution if required. It is helpful to employ an interpreter who has some knowledge of the subject matter, especially if the vocabulary is highly specialized.

Communication Support Workers provide an interpreting service and may also provide a lip speaking or note-taking service and a voice-over for the deaf student's contributions, but will not yet have reached interpreter level (They will usually be qualified to Level I/II Certificate in BSL).

4.5.4.1 "Check your progress" - 1

1. Mention any four restoring techniques using humans support?

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   .....

2. Write the full form of BSL?

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4.5.4.2. Description And Facts

A student with hearing impairment may be hard to recognize in the classroom. Some students use hearing aids and have learned to lip-read or sign. Arperson with no hearing is deaf. "Hard of hearing" defines a hearing impairment in which the sense of hearing, although diminished, is functional. The following list describes some facts about individuals with hearing impairment:

- Not all people with hearing impairment are good lip readers. Lip reading skill has no correlation to a person's intelligence.
- Not all people with hearing impairment know how to sign. Not all students with hearing impairment use interpreters. Some prefer to communicate through lip reading and some prefer sign language.
- A hearing aid does not correct hearing loss like glasses correct vision problems. Most persons with hearing impairment have sensory neural hearing losses and the clarity of speech is affected. The hearing aid does not make speech more clear; it merely amplifies the sound.
- Many people with hearing impairments are easily understood. Others cannot monitor the volume and tone of their speech and may be initially hard to understand.
- Students who have hearing impairment, just like students who do not have hearing impairment, vary to some degree in their communication skills.

4.5.4.3. Possible Barriers:

- Lack of interpreters or people who understand sign language
- Decreased awareness of auditory cues in communication

4.5.4.4. Interaction with An Individual with Hearing Impairment :

Each and every student is functionally different. So interactions with an individual with hearing impairment following suggestion are that:

- Get the individual's attention before speaking.
- Look at the individual when you speak.
- Do not block the area around your mouth as it may inhibit lip reading.
- Speak naturally and clearly. Slowing down slightly may help. Do not exaggerate lip movement and do not shout.
- Try to avoid standing in front of windows or other light sources. The glare from behind makes it difficult to read lips and other facial expressions.
- Do not hesitate to ask the student to repeat if you do not understand. If repeating does not work, use a pen and paper. Communication is the goal; the method is unimportant.
- If a student is using an interpreter, speak directly to the student, not the interpreter.
- Short sentences are easier to understand than longer sentences with several clauses.
- If the student does not understand, try repeating, and if the student still does not understand, rephrase a thought or use a different word order rather than repeating the same words.
- It is impossible to lip-read a word that the student has never seen before. If time permits, it helps to write the word and then let him or her see how it looks on the lips.
- Facial expressions, gestures and other body language help convey the message.
- If a sign language interpreter is present, request him or her to interpret - even for social and non-academic conversations.

4.5.4.5 "Check your progress" - 2

1. Mention any two facts of hearing loss?

.....

.....

2. Mention any five ways of interactions with an individual having hearing impairment?

.....

.....

4.5.5. Restoring Techniques Using Technological Support (Hearing Device)

If you think you might have hearing loss and could benefit from a hearing aid, visit your physician, who may refer you to an otolaryngologist or audiologist. An otolaryngologist is a physician who specializes in ear, nose, and throat disorders and will investigate the cause of the hearing loss. An audiologist is a hearing health professional who identifies and measures hearing loss and will perform a hearing test to assess the type and degree of loss.

Aural Rehabilitation: The professional efforts designed to help a person with hearing loss. This includes services and procedures for lessening or compensating for hearing impairment and specifically involves facilitating adequate receptive and expressive communication. (ASHA, 1984; WHO, 2000).

4.5.5.1-Amplification options

The most important tool to help the hearing impaired person surmount the hearing handicap is a hearing aid or educational amplification unit. No system of amplification can restore hearing, but it can make useful residual hearing which could not otherwise be reached. Using amplifications the clients will be able to achieve goals unattainable without it.

4.5.5.2-Types of hearing aids:

All hearing aids consist of four basic parts:

1. Microphone - picks up the sound and sends it to the amplifier
2. Amplifier - makes the sound louder
3. Receiver - sends the amplified sound into the ear canal
4. Battery - supplies the power to the hearing aid

4.5.5.3-Behind-the-Ear Aids

The behind-the-ear (BTE) hearing aid is the device most used by children. The components are all contained in a plastic case which sits behind the ear. The case is connected to an earmould by a piece of clear plastic tubing. The earmould is specially designed to fit inside of the user's ear. A BTE hearing aid may be used with any degree of hearing loss and can be very flexible for use with a telephone or assistive listening device.

4.5.5.4-In-the-Ear Aids

The in-the-ear (ITE) hearing aid is smaller than the BTE hearing aid. All of the components fit inside of the plastic case which is made to fit the user's ear. The ITE hearing aid is not always the most appropriate choice for pediatric amplification because the aid must be replaced as the child grows.

4.5.5.5-In-the-Canal Aids

The in-the-canal (ITC) hearing aid is even smaller than the ITE hearing aid, fitting entirely inside of the ear canal. The ITC is used primarily with mild-to-moderate hearing losses. It is not recommended for pediatric use because of its size, and because it must also be replaced as the child grows.

4.5.5.6-Body Aids

A body aid consists of a rectangular case and an earmould. The rectangular case contains the microphone, amplifier, and batteries and may fit into a pocket or "fannypack". There is a cord which connects the case to the button receiver. The button receiver is snapped into an earmould which is placed in the ear. The body aid is often used by people who have a severe-to-profound hearing loss.

4.5.5.7-Bone Vibrator Aid

The bone vibrator hearing aid is primarily used by patients with conductive losses, or those who cannot wear traditional hearing aids, such as patients with atretic or microtic ears. The vibrator sits on the mastoid bone and is held in place by a headband.

4.5.5.8-Cochlear Implants:

This is not a hearing aid but an implantable device, which stimulates the auditory nerve directly with help of intra-cochlear electrodes. The cochlear implant is a relatively

new device. It consists of internal parts, which go under the skin behind the ear and in the cochlea, and external parts worn behind the ear and on the body. The internal component, which is inserted during a surgical procedure, is made up of an electrode array, a receiver, and a magnet. The electrodes are inserted into the cochlea and the receiver and magnet are set into the bone behind the ear. The external component is made up of a transmitter coil, a microphone, and a speech processor. Both the transmitter coil and microphone are worn behind the ear, while the speech processor may be fit into a pocket or fanny pack. There are several criteria which a child must meet in order to be considered an implant candidate. The child must have a severe-to-profound bilateral loss, and receive little or no benefit from hearing aids. Medical, psychological, and educational status are also taken into consideration prior to implantation.

4.5.5.9 FM Systems

FM systems, or auditory trainers, are primarily used in the school setting; however, they may be useful in a variety of listening situations. The system consists of two parts: a transmitter and a receiver. The speaker wears the transmitter and speaks into a microphone attached to it. The listener wears the receiver which picks up the signal from the microphone and delivers it to the ear through an earpiece on the child's hearing aid. The size and shape of the two components may vary; but the purpose remains constant: to raise the level of the speaker's voice above the background noise (increase the signal-to-noise ratio).

4.5.5.10 "Check your progress" - 3

1. Write the basic parts of hearing aids?

   .....

   .....

2. What are the different types of hearing aids?

   .....

   .....

3. What are the full from/of C.I. and P.M.

   .....

   .....

4.5.6 Auditory Training

Hearing mechanism plays a very vital and important role in the development of speech and language ability for purpose of communication. We are always surrounded by various types of sound and through experience and exposure and we learn to select and response to the sound which are important. So hearing serves as the primary sensory modality through which we maintain an awareness of our surrounding.

4.5.6.1 Importance

Auditory training is essential and important for the hearing impaired child. Auditory training is required to make use of his/her residual hearing and to listen and understand the sound and acquire the speech and language skills gradually. Auditory training for hearing impaired child must be designed to serve mainly two purposes.

(a) To perceive a wider variety of environmental sounds which will allow the child to be at least to unexpected change in his/her environment and thus ensure his safety well being for his/her life.

(b) To perceive verbal signal, to acquire the linguistic role of language and develop speech skills and it is able to exchange idea and use oral communication.

4.5.6.2 When to start Auditory Training

As early as possible. Auditory training should be started when routine audiometric assessment is completed. Then the hearing impaired child wearing hearing aid in both ears and speech therapist as teacher gives speech stimuli and teacher should be given study)

4.5.6.3 Pre requisite issue for auditory training

The auditory training is very important for the development of speech and language. Few essential requirements given the auditory training start. The requirements are:

(1) Fitted suitable hearing aid.

(2) Suitable reinforcement may be given and co-operation of the child and the family member in the auditory training programme.

(3) Child's response to different kinds of sounds and intensities need to be checked carefully.

(4) Always remember that the sound which is exposed to child often might be listed in hierarchical manner.

(5) The activities and the material required for training the child should be prepared in advance and it is available normally in home.

(6) It is better not to give auditory training when the child is likely to sleep or is involved other in activity.

4.5.6.4 Conditioning Sounds

Conditioning is an important stage in auditory training. So, sound visual and tactile clues should be provided to show the child from where and how the sound is coming. The condition may be started with sound. These sounds are rubbing the finger, marble sound etc. Auditory training may be carried out at different levels as per the following steps.

(1) Introduce the sound one by one and make a note at which levels child gives the response.

(2) Vary the intensity of sounds and distance between the child and sound and note the lowest intensity and longest distance from where the child can detect the sounds.

(3) Train the child to say how many times he/she has heard the sounds.

(4) Train the child to say if the sound is of shorter or longer duration like /a/ and /aa/, /e/ and /ee/ etc.

(5) The child may be trained to localize the sound i.e. to detect from which direction the sound is coming.

(6) Train the child to listen and repeat the number or words in proper sequence.

4.5.6.5 Stages of Auditory Training

The auditory training consists of 4 major stages of development such as:

(1) Sound awareness training

(2) Sound discrimination training

(3) Discrimination of gross sound

(4) Fine discrimination of speech sound

(1) Sound awareness training: Introduce to different sounds one by one. The child

should respond to these sounds and from where the sound comes. Every day add loud sound a little more for the purpose of child's attention and focus on loud sound. Sound awareness training helps to assess hearing ability of the child in terms of the types of sound, intensity level and distance level from which the child can hear or understand.

(2) **Sound discrimination training:** This training involves the child to various auditory sounds produced by noise makers i.e. bells, drum, horns, whistle etc. As the child learns to respond to the presence of the sound and to discriminate between one or more sounds. This training should be given in the following steps.

(a) Train to listen to two sounds repeatedly.

(b) Child should consistently respond to both the sounds properly.

(c) Using conditioning procedure the child should be given auditory visual and tactile clues.

(d) Care should be taken in the presentation of the stimulus.

(e) Every step should be provided suitable encouragement and connect responses 80 90%.

(f) Gradually introduce many more sounds in the training.

(3) **Discrimination of gross sound:** At this stage the child has learnt the skills in recognizing the presence of the sound and perceiving gross difference between vowel sound with grossly dissimilar phonetic elements and between phrases which are closely related to his/her everyday experience e.g. p/g, s/l, pen/table etc.

(4) **Fine discrimination of speech sound:** It is last stage of auditory training. This stage helps the child to recognize suitable difference between similar vowels and consonants sounds as well as integrating the child's expanding vocabulary to permit him/her quick and accurate understanding of connected speech such as p/b, k/g, pin/bin, /tip/dip, ball/mall etc.

4.5.6.6 Auditory Training Material

Drum, Table, Khanjiri, Whistle, Rattle, Bell, Horn, Telephone, Dog bark, Cat's meow, Cow's moo, Crowing the cock, Singing bird, Moving train, Motor sound, Fire engine, Cycle bell, Door bell, Door knock, Laughing, Crying, Running, Dancing, Eating, Clapping, Cooker whistle, Calling name, Dad's Mummy's voice, Aero plane sound, T.V., Radio, Computer etc and other natural and unnatural variety of sound.

4.5.6.7 "Check your progress" - 4

1. What is Auditory Training?

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   .....

2. Mention any four pre-requisites of auditory training?

   .....

   .....

3. How many stages are present in Auditory Training Name them.

   .....

   .....

4.5.7 Let us Sum Up

- Deafness is a silent disability and is either partial and total.
- In the hearing world deaf people face man challenges in hearing environment.
- The challenges are education, communication and employment.
- Hearing impaired people can communicate by lip-reading, sign language and using hearing devices such as hearing aids and also cochlear implant. When they use lip-reading. sign language and hearing devices that means loss of normal hearing and restoring using (human interpreter) technological supports (hearing device)
- Restoring techniques are (1) Human interpreter (lip-reading, sign language. communication worker) (2) Technical support (hearing device/amplification option) (3) Auditory training.

4.5.8 Answer to Check Your Progress

"Check your progress" - 1

- Speak clearly but avoid speaking artificially slowly, exaggerating your lips, or shouting as this affects the natural rhythm of speech.
- Make use of natural gesture and facial expression as a clue to meaning.

- Make sure that there is adequate light on your face. Do not stand with your back to windows.
- Position the student so that he/she can lip-read you easily and see the projector or board and as much of the class as possible if there is to be a group discussion.
- Repeat questions asked from the floor.

2. British Sign Language (BSL) or Sign Supported English.

"Check your progress" - 2

1-

- A hearing aid does not correct a hearing loss like glasses correct vision problems. Most persons with hearing impairments have sensory neural hearing losses and the clarity of speech is affected. The hearing aid does not make speech more clear; it merely amplifies the sound.
- Many people with hearing impairments are easily understood. Others cannot monitor the volume and tone of their speech and may be initially hard to understand.
- Students who have hearing impairments, just like students who do not have hearing impairments, vary to some degree in their communication skills.

2-

- Get the individual's attention before speaking.
- Look at the individual when you speak.
- Do not block the area around your mouth as it may inhibit lip reading.
- Speak naturally and clearly. Slowing down slightly may help. Do not exaggerate lip movement and do not shout.
- Try to avoid standing in front of windows or other light sources. The glare from behind makes it difficult to read lips and other facial expressions.

"Check your progress" - 3

1. Microphone, amplifier, receiver, battery.
2. Body worn hearing aids, behind the ear, in the ear aids, in the canal aids, bone vibrations aids.
3. Cochlear Implant and Frequency Modulated system.

"Check your progress" - 4

1. Auditory Training is a process of listening capacity which improves in hearing impaired child for the purpose of listening his/her residual hearing.

2-

- Fitted suitable hearing aid.
- Suitable reinforcement may be provided and co-operation of the child and the family member in the auditory training programme.
- Child's response to different kinds of sounds and intensities need to be checked carefully.
- Always member that the sound which are exposed to child often might be listed in hierarchical manner

3- The auditory training consists of 4 major stages of development such as:

- Sound awareness training
- Sound discrimination training
- Discrimination of gross sound
- Fine discrimination of speech sound

4.5.9 Unit End Exercises

1. What is Auditory Training? Describe the details about Auditory Training.
2. Describe the details about restoring technique human interpreter and technical support.

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Unit-5 ▫ Learning Disability : Nature, Needs and Intervention

Unit-5.1 ▫ Definition, Types and Characteristics

Structure :

5.1.1 Introduction

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

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

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

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

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

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

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

"....a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia." However, learning disabilities do not include learning problems that are primarily the result of visual, hearing or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural or economic, disadvantage.

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

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

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

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

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

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

Definition, Types and Characteristic :

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

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

5.1.2. Objectives

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

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

5.1.3. Definitions

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

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

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

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

U.S. Office of Education 1977 definition. By the early 1970s NACHC definition of 1968 had become the most popular one among state departments of education (Mercer, Forgnone, & Wolking, 1976). This no boubt figured into the USOE's virtual adoption of the NACHC definition for use in the implementation of P.L. 94-142 :

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

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

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

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

Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquistion and use of listening,

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

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

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

C. DISORDERS NOT INCLUDED.—Such term does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities,

of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (IDEA Amendments of 1997, Sec. 602(26), p. 13) Continuation or Research Strands of the Learning Disabilities Research Institutes As we noted earlier, Keogh (1983) noted that four of the learning disabilities research institutes funded by the USOE in the late 1970s and early 1980s (Columbia University, University of Illinois at Chicago, University of Kansas, University of Minnesota, and University of Virginia) approached learning disabilities as a strategic, information processing problem and developed their intervention within this framework. She pointed out that the institutes' data on outcomes were very promising. McKinney (1983) reported that the institutes' intervention reserach demonstrated that students with learning disabilities are capable of learning taks-appropriate strategies that enable them to succeed in academic learning and adaptive functioning. Although it is conjecture, it is easy to postulate that the institutes' rigorous research standardsand encouraging findings provided a springboard for future reserach. Columbia University. The Columbia insitute's research in reading most likely helped facilitate the proliferation of reading intervention reserach that has occured in the field of learning disabilities. For example, Lyon (1988) reported that the National Institutes of Health (NIH) has received more than $25 million to study how students with and without disabilities learn to read. Today, findings from the NIH studies are having a significant impact on the reading instruction provided youngsters with learning disabilities. Judith Birch of Columbia University recently teamed with numerous NIH researchers to develop a very informative video series that present research-based practices in teaching reading to students with learning disabilities.

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

Those children who suffer from learning problem due to visual hearing or any physical disability they are not included under this section. The children who also

suffer from mental retardation, emotional disorder or any environmental disorder are not included under LD. This definition has two dimensions.

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

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

1. Academic difficulties :

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

2. Descrepancey between potential and achievement :

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

3. Exclusion of other factors :

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

4. Neurological disorder :

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

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

According to the definition of National Joind Committee (1991) 'Central nervous system dysfunction refers to there is no damage in the brain or in the system of perception of the child. But it has some different activities in their brain rather than other general children.

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

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

5.1.4 Types and characteristic

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

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

1. **Minimal Brain Dysfunction (MBD) :**

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

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

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

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

2. **Perceptual motor disabilities :**

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

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

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

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

3. **Psycholinguistic or language disability :**

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

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

Academic Difficulties :

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

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

What is dyslexia ?

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

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

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

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

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

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

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

What causes dyslexia and reading problems ?

The main reasons for reading problems are :

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

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

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

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

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

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

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

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

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

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

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

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

Helping Children with Reversals :

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

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

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

Remediation :

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

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

What is dysgraphia ?

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

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

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

What cause dysgraphia ?

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

Who is qualified to diagnose dysgraphia ?

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

What is the treatment for dysgraphia ?

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

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

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

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

Dyscalculia—Difficuluty doing math :

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

Symptoms :

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

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

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

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

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

5.2 ▫ Tools and areas of Assessment

Structure :

5.2.1 Identification and Assessment :

5.2.2 Tools

5.2.3 Assessment Strategies

Introduction :

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

Objectives :

To learn Identification and Assessment of Learning disability Students

5.2.1 Identification and Assessment :

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

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

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

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

(d) Monitoring students progress through periodic data assessment.

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

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

5.2.2 Tools

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

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

5.2.3 Assessment Strategies :

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

Various assessment strategies include :

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

(b) Contextual assessments which includes :

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

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

(iii) Error analysis to discover predictable mistakes.

(c) Standardized testing, which includes :

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

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

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

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

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

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

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

(h) Authentic assessment, which include :

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

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

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

5.3 □ Strategies for reading, writing and maths

Structure

5.3.1 Introduction

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

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

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

(c) The strategy encourages generalization and transfer.

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

(e) The strategy generated through teacher student interaction.

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

5.3.2 Objective :

To learn strategy of reading for learning Disbality students

To learn strategy of writing for Learning Disbality students

To learn strategy of mathematics for Learning Disbality students

5.3.3 Reading Strategies :

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

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

■ **Play word games.**

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

■ **Read every day.**

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

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

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

■ **Put learning to use.**

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

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

■ **Listen to books.**

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

■ **Read to child every night.**

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

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

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

Remdiation in Reaidng :

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

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

A. Errors in reading

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

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

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

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

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

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

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

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

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

D. Teaching words meaning.

E. Comprehension skills.

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

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

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

The use of fluency measures in early identfication :

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

Instruction and remediation in fluency :

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

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

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

5.3.4 Strategies for writing :

Introduction :

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

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

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

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

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

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

Developmental Hierarchy of Writing Tasks

i. scribbling

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

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

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

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

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

Remediation :

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

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

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

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

5.3.5 Strategy for Mathematics

Introduction :

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

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

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

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

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

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

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

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

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

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

■ **Provide specialized materials.**

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

■ **Make your expectations explicit.**

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

■ **Provide time for checking work.**

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

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

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

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

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

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

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

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

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

■ **Play math games.**

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

Unit 5.4 : Curricular Adaptation, IEP, Further Education

Structure

5.4.1. Introduction

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

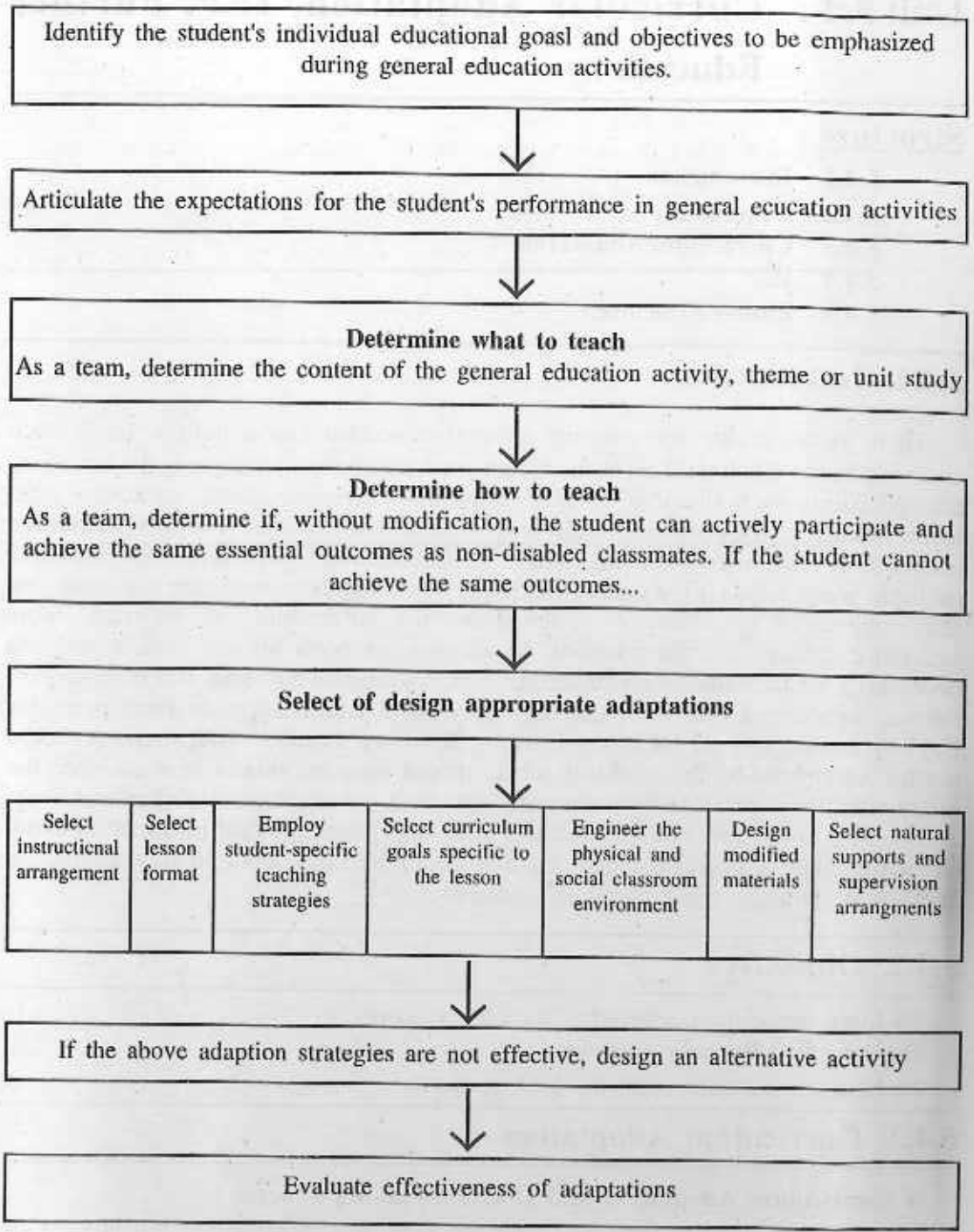
5.4.2. Objectives

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

5.4.3. Curriculum Adaptation

A Curriculum Adaptation and Decision-making Process :

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


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

A Curriculum Adaptation and Decision-making Model :

Examine the Structure of the Instruction :

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

   From traditional arrangements to :

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

Examine the Demands and Evaluation Criteria of the Task

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

Examine the Learning Environment

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

- Environmental / Physical arrangements
- Social rules
- Lesson location

Examine the Materials for Learning

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

Examine the Support Structure

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

Arranges Alternative Activities that Foster Participation and Interaction

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

Curriculum Adaptations :

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

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

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

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

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

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

Move in this direction only when necessary

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

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

Examples include :

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

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

Examples include :

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

Move in this direction only when necessary

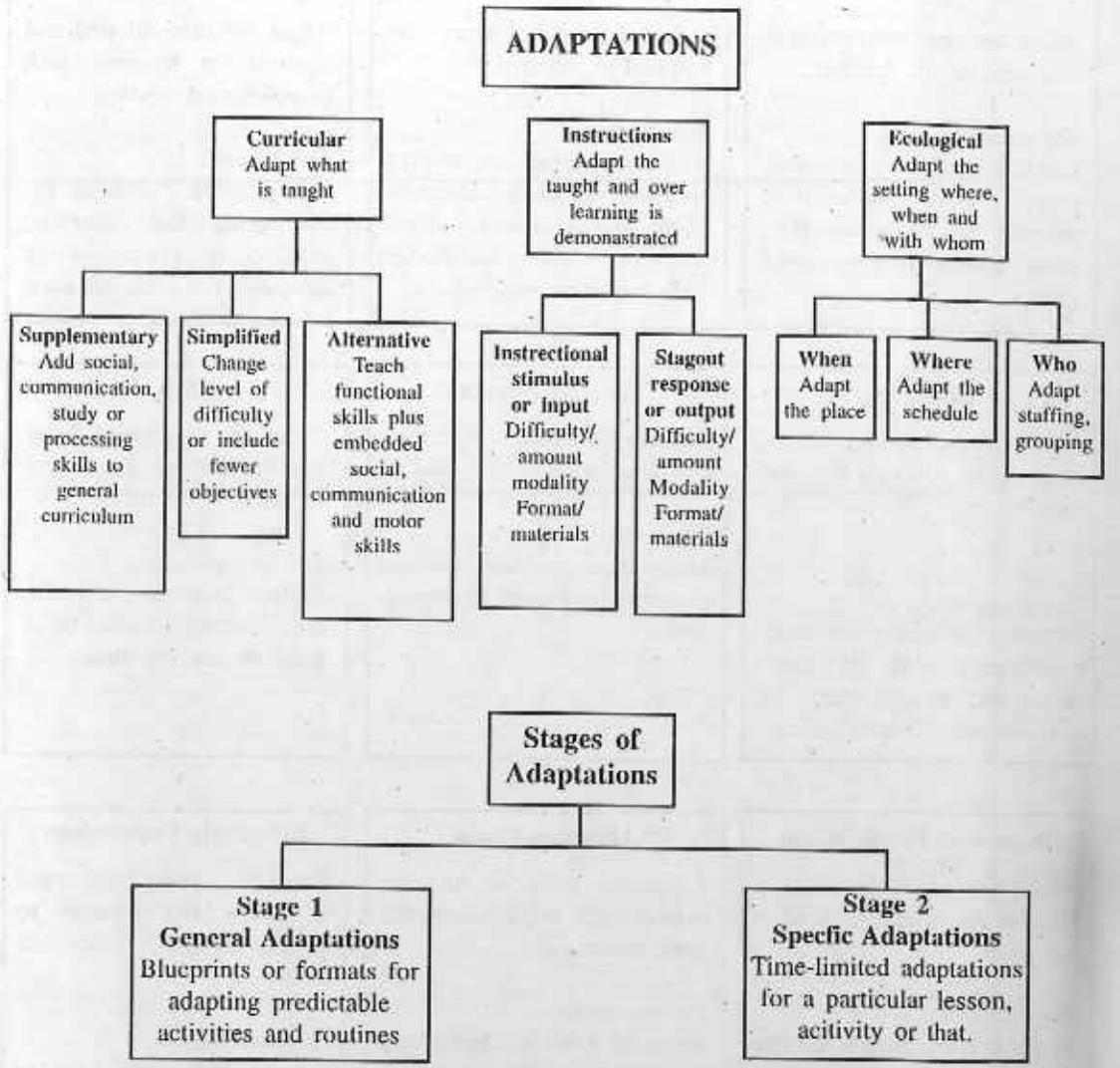
Overlap does occur among the five types of curriculum adaptation.

Nine Types of Adaptions :

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

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

Adaptations :



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

5.4.4 IEP

IEP

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

What does an IEP contain ?

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

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

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

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

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

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

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

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

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

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

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

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

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

5.4.5. Further Education :

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

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

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

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

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

Progression And Support :

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

Person-Centered Planning and Further Education :

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

5.5. □ Transition Education, Lifelong Education

5.5.1. Transition Education

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

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

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

Transition Planning Important for Individuals with LD :

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

5.5.2. Lifelong Education :

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

5.5.3 Unit Summary

Learning Disability :

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

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

Tools and Areas of Assessment :

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

Strategies for reading, writing and maths

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

Curriculum Adaptation :

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

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

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

IEP

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

Further Education

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

Transition Education

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

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

Lifelong Education

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

5.5.4 "Cheek your progress" :

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

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Unit-6 ❐ Autism Spectrum Disorder : Nature, Needs and Intervention

Unit-6.1 ❐ Definition, Types and Characteristics

Structure

6.1.1 History and Brief Note

History

- In 1943, Leo Kanner released an article titled "Autistic Disturbances of Affective Contact"
- It was in this article that 'autism' was first used to describe 11 children exhibiting what are now recognized as symptoms of autism
- Kanner noted that: "The basic desire for aloneness and sameness has remained essentially unchanged..."
- It was based upon this observation that he decided to use the word 'autism' itself, because of it's meaning in Greek which is 'self

- Autistic adults and children alike were being mLsdiagnosed in the early twentieth century.

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

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

While the disorder is not rare, the majority of autistic people has not been diagnosed and do not receive the services they need. This problem occurs in many countries, but is especially true in where there is a tremendous lack of awareness and misunderstanding about autism even among the medical professionals, who may either misdiagnose or under diagnose the condition. So, diagnosis of autism is a

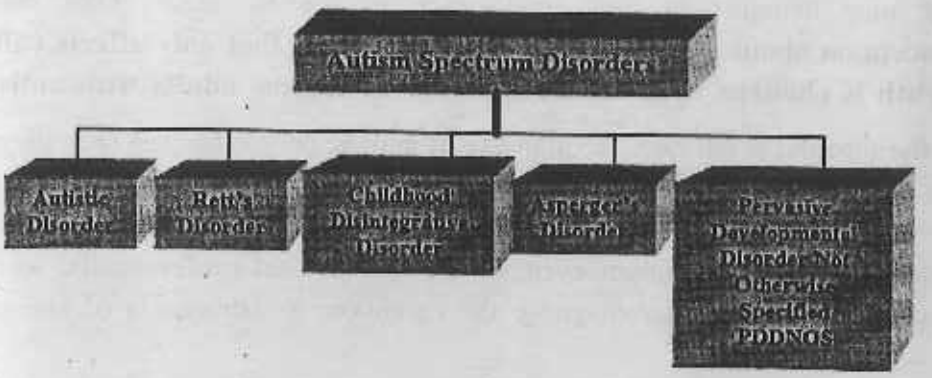
major problem in science before entering into its intervention. At first, autism can be described by the symptoms like.

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

6.1.2 What is Autism

Definition

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



Autism means a developmental disability. Now Autism is called a Neuro-biological disorder, significantly affecting verbal and non verbal communication and social interaction, generally evident before age 3. It adversely affects a child's educational performance. Other characteristics often associated with""Autism are-engagement in repetitive activities, stereotyped motor movements, unusal responses to sensory experiences and resistance to enviornmental changes.

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

  It is widely recognized as a neuron developmental disorder that affects the functioning of the brain.
- It is a spectrum disorder
- Children with autism are unable to interpret the emotional states of others, failing to recognize anger, sorrow or manipulative intent
- It impacts the normal development of the brain in the areas of social interaction and communication skills
- Children and adults with autism typically have difficulties in verbal and non-verbal communication, social interactions, and leisure or play activities
- Stereotypic (self-stimulatory) behaviors may be present
- In some cases, aggressive and/or self-injurious behaviors might be present
- It is not a behavioral, emotional or conduct disorder
- It is not a mental illness
- There are no medical tests that can be used to diagnose autism

6.1.3 Signs and symptoms of autism in babies and toddlers

- If autism is caught in infancy, treatment can take full advantage of the young brain's remarkable plasticity.
- Although autism is hard to diagnose before 24 months, symptoms often surface between 12 and 18 months.
- If signs are detected by 18 months of age, intensive treatment may help to rewire the brain and reverse the symptoms.
- The earliest signs of autism involve the absence of normal behaviours but not the presence of abnormal ones so they can be tough to spot.

- Some autistic infants don't respond to cuddling, reach out to be picked up, or look at their mothers when being fed.

6.1.3.1 Early signs of autism in babies and toddlers

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

6.1.4 What causes autism

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

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

6.1.5 Characteristics Associated with Autism Spectrum Disorders

Characteristics :

According to DSM IV, Autism in such a developmental disorder under P.D.D., that

includes three qualititive deficits-

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

There three are together called 'Autistic Triad'

1. Lack of Socialization :

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

2. Lack of Communication :

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

3. Lack of Flexibility :

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

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

6.1.5.1 Common Characteristics in Autism Spectrum Disorders.

Social Characteristics

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

Communication Characteristics

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

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

Behavior Characteristics

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

Learning Characteristics

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

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

6.1.5.2 Related Characteristics in Autism Spectrum Disorders

Sensory/Motor Characteristics

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

Attention / Organization Characteristics

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

6.1.6 Types

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

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

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

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

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

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

Figure 2 - Autism Spectrum Disorders (ASD)

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

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

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

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

- **Asperger's Syndrome**

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

- **Autism/Autistic Disorder**

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

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

6.6 Diffential Diagnostic Feature : Autism and Related disorder

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

6.1.2.6 Treating Autism

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

AUTISM

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

Inappropriate laughing or giggling

No real fear of dangers

Apparent insensitivity to pain

May not want cuddling

Sustained unusual or repetitive play; Uneven physical or verbal skills

May avoid eye contact

May prefer to be alone

Difficulty in expressing needs; May use gestures

Inappropriate attachments to objects

Insistence on sameness

Echoes words or phrases

Inappropriate response or no response to sound

Spins objects or self

Difficulty in interacting with others

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Autism Society of America

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January is National Autism Awareness Month.

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

6.2 ❐ Tools and Area of Assessment

Structure :

6.2.3.13 Observation Domains

6.2.3.14 Cognitive Assessment

6.2 Tools and Area of Assessment

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

6.2.1 Interdisciplinary and Multidisciplinary assessment

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

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

6.2.1.2-Multidisciplinary process can take with the child and family participating in numerous sessions or it can take place over the course of several months. Professionals in a multidisciplinary process often operate without benefit of

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

6.2.2 Diagnostic tools for ASD

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

1) **Clinical Assessment:**

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

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

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

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

(3) **Observational Assessment :** Systematic observation of behaviour helps in

monitoring teaching methodologoies. It has two steps—Formal and Informal.

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

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

6.2.3 Assessment of ASD

There are many areas of assessments. These are;

6.2.3.1 Child Health History

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

a. Prenatal History:

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

b. Perinatal History:

- Obtain information about the length of gestation, onset of labor, and any complications that occurred during labor and delivery. If, for example, a Caesarian section had been performed, determining whether an indication of

fetal distress would suggest that further information might be helpful, such as exploring for signs of fetal hypoxia.

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

c. Past Medical History:

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

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

d. Review of Systems:

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

6.2.3.2 Developmental and Behavioral History of the Child

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

- First concerns about the child's development. This includes the parents' first concerns as well as concerns of others (relatives, PCP) that may have preceded parental concerns.It also important to ascertain their interpreta-tion of the events

at that time (i.e., family move, illness, daycare experience, etc.).

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

6.2.3.3 Family Medical and Mental Health History

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

died at an early age.

6.2.3.4 Medical Evaluation

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

6.2.3.4.1-Components of a Medical Examination

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

6.2.3.4.1.a-Physical and Neurodevelopment Examination

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

Fragile X Syndrome: Physical features present in young children with fragile X syndrome may include prominent ears (70 percent), high arched palate (63 percent),

hyperextensible fingers (49 percent) and a long face (64 percent) (Hagerman, 1999). Features may be present in girls as well as boys, and may present in more subtle ways.

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

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

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

6.2.3.4.1.b-Developmental Neurological Examination

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

- Head circumference
- Cranial nerve function
- Cerebellar function
- Deep tendon reflexes
- Postural responses
- Primitive reflexes
- Motor examination, including active and passive tone, strength,involuntary movement

- Tests of gross and fine motor coordination
- Presence of abnormal reflexes and signs, such as Babinski response

6.2.3.5- Laboratory Tests

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

6.2.3.6 Genetic Testing and Consultation

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

6.2.3.7-Neurological Laboratory Evaluation

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

6.2.3.8 Other Laboratory Investigations

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

6.2.3.9-Sensory Evaluation

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

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

6.2.3.10-Direct Behavior Observation

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

Direct Observation Assessment Checklist: Autism Spectrum Disorders

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

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

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

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

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

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

6.2.3.11 Play Environment

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

6.2.3.12 Degree of Structure

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

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

6.2.3.13 Observation Domains

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

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

6.2.3.14 Cognitive Assessment

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

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

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

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

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

6.3 □ Instructional Approaches

Structure

6.3 Instructional Approaches

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

6.3.1 Principe

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

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

6.3.2 Instructional Approaches

There are six representatives comprehensive programs of instructional approaches are:

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

6.3.2.1 Developmental Approach

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

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

6.3.2.2 Applied Behaviour Analysis (ABA)

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

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

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

i. What does effective ABA include?

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

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

ii. What strategies are associated with ABA?

- Prompting
- Shaping

- Fading
- Chaining
- Modeling

iii. What are types of prompts used in ABA?

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

iv. What is shaping in ABA?

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

v. What is meant by chaining?

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

vi. How is modeling done?

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

vii. What is involved in Task Analysis?

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

viii. What kinds of feedback should be used?

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

ix. What reinforces work?

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

x. What are the features of Discrete Trial Training?

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

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

6.3.2.3 Structured Teaching

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

Reasons for using structured teaching

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

- Adapts the environment to make it more orderly and predictable

- Incorporates routines and makes things more familiar
- Emphasizes "finished" and teaches the concept of "finished"
- Focuses on the development of independent skills

Students with autism benefit from:

- **Physical structures**

➢ Clear physical and visual boundaries

➢ Minimal visual and auditory distractions

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

- **Daily schedule**

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

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

- **Individual work systems**

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

➢ A meaningful routine that answers these questions for the student

What work? How much work?

When is it finished? What happens next?

- **Visual structures**

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

➢ Shows student what to do with materials

➢ Includes both visual instructions and visual organizations

6.3.2.4 Psychotherapies

- Mental health providers can play a valuable role in a comprehensive program for a student with ASD. For example, mental health professionals within the schools, communities and medical facilities should provide support for families, particularly for families whose child has recently received a diagnosis of ASD.
- Mental health providers can also consult with teachers, facilitate social skills groups for students, and assist with in-service training for school faculty and community personnel. Although it has been well-documented in individualized psychotherapy

(e.g., "talk therapy") is not particularly effective with children with ASD, therapeutic strategies can certainly be geared toward behavioural change and skill-building.

6.3.2.5 Sensorimotor Therapies

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

6.3.2.6-Play

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

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

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

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

6.4 □ Teaching methods

6.4 Teaching methods in Autism

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

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

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

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

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

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

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

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

6.4.1 Teaching Tips for Children with Autism

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

6.4.2 Parenting a Child with a Disability

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

6.4.3 Quality Program Indicators

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

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

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

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

6.4.3.1 Comprehensive Team Approach Involving the Family

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

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

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

6.4.3.2 Comprehensive Assessment of Skills and Deficits

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

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

6.4.3.3 Clearly Defined Goals

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

on the-results of the child's evaluation, goals may be written in one or more of the following areas:

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

as they enhance cognitive, social and motor skills enhance relationships between self and environment; shape appropriate use of unstructured time; increase opportunities to get physical exercise and stay healthy; and increase enjoyment of life.

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

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

6.4.3.4-: Structure the Environment

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

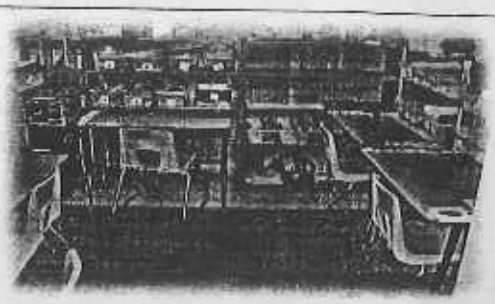
- **Physical Structure**
- **Routines**
- **Visual Supports**
- **Activity schedules**

Physical Structure

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

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

Example of Individual Work Stations



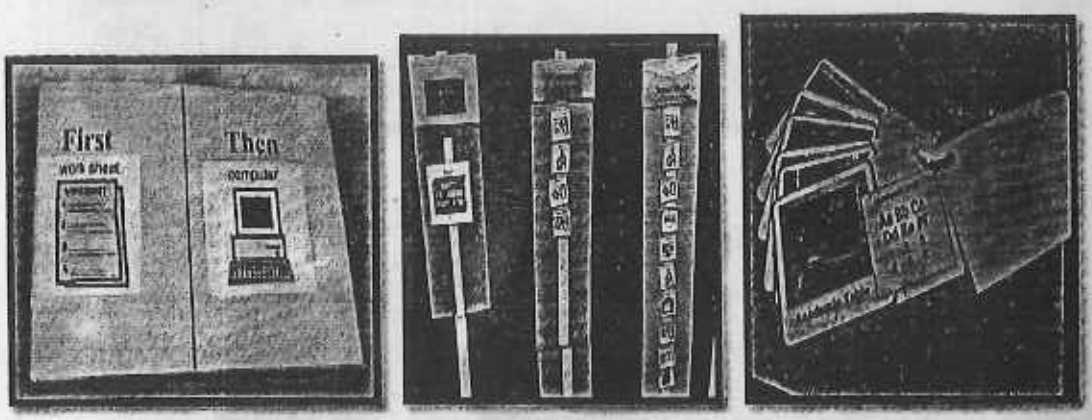
Routines

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

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

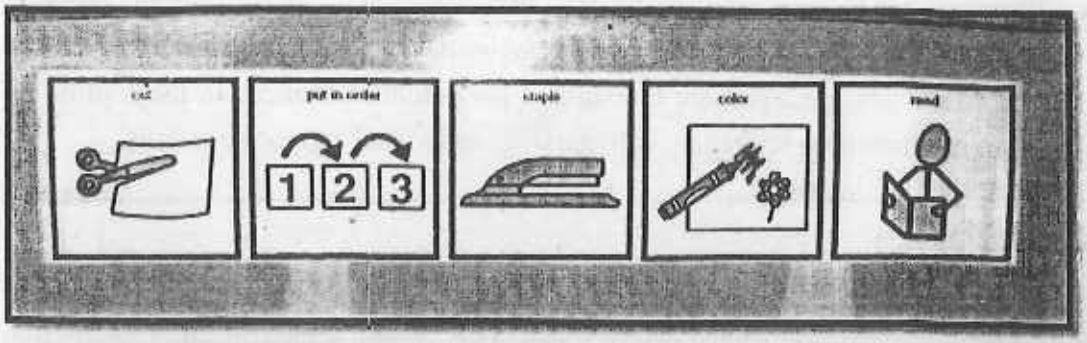
Visual Supports

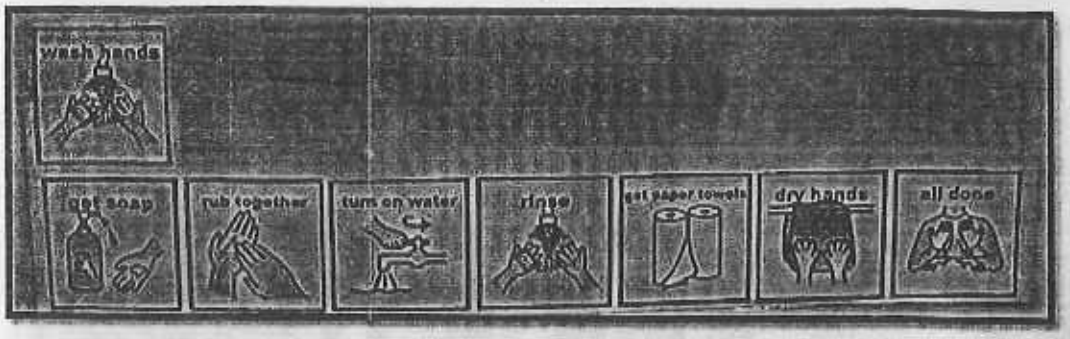
Below the figure shows an example of a visual support for routines. Students with autism spectrum disorders have strong visual skills. Visual organization of instruction and materials allows the student to utilize these visual learning strengths. Examples of helpful visual supports may include the use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

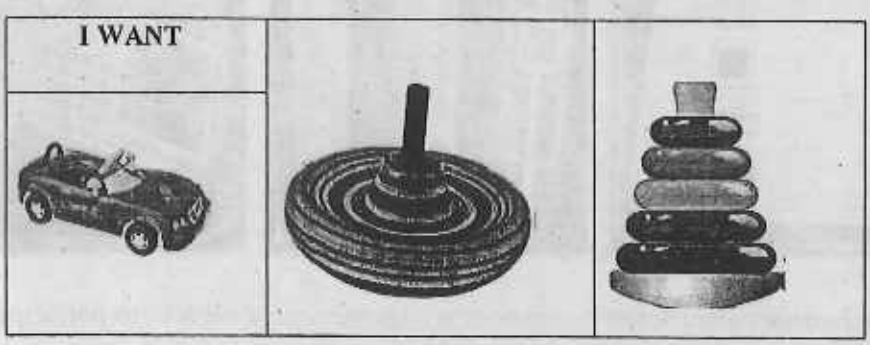


Activity schedules are a set of pictures or words that cue a student to participate in an activity. Depending on the student's age and ability level, an activity schedule may be a three ring binder with only one activity on each page, it may be a partial or full day picture schedule, or it may be as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

Activity schedules





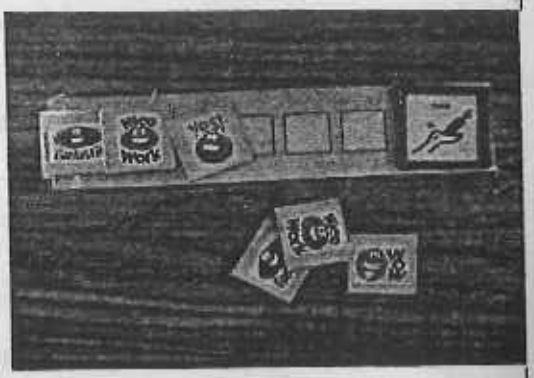


6.4.3.5 Effective Teaching Strategies

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

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

a. Motivation and Reinforcement

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

b. Teaching Strategies

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

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

c **Academic Strategies**

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

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

d. Communication Strategies

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

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

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

e. Social Development Strategies

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

f. Behaviour Strategies

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

g. Other Considerations

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

6.4.3.6 Applying Functional Behaviour Assessment to Challenging Behaviour

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

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

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

6.4.3.7 Assessment of the Intervention

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

6.4.3.8 Transition

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

6.4.3.9 Opportunities with Peers

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

6.5 □ Vocational Training and Career Opportunities

Structure :

6.5 Vocational Training and Career Opportunities

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

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

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

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

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

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

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

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

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

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

3.5.1 The Importance of Promoting Generalization of Vocational education of ASD

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

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

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

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

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

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

6.5.2.2 Align your Program with Core Academic State Standards

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

available facilities. For example, high school language arts common core standards require students to be able to understand the meaning of words in this context includes technical text from a variety of sources in order to solve a problem.

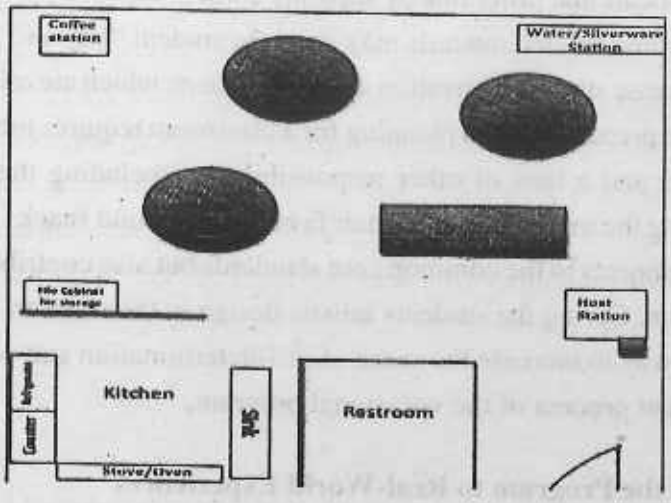
6.5.2.3 Involve Your Students in the Planning Process in a Meaningful Way

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

6.5.2.4 Connect the Program to Real-World Experiences

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

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



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

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

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

6.5.2.6 Use Research-Based Training Methods

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

6.5.2.7 Integrate Program within the School Community

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

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

encouraged and expansion of students' language use and abilities was facilitated.

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

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

6.5.2.8. Use Authentic "Real-world" Reinforcement

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

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

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

6.5.2.9. Vocational Evaluation Checklist for an Individual with Autism

Vocational Evaluation Checklist for an Individual with Autism

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

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

What are this student's strengths/limitations?

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

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

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

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

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

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

Where/How does this student do the following:

	Where		How
Greets people			
Gives eye contact			
Negotiates			
Initiates			
Waits			

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

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

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

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

What does this student need to complete a job successfully'

	Yes	No	Comments
Consistent /clear definition'of beginning and finish			
What is his or her motivation			
"Likes doing activities with someone.			
"Likes doing" something preferred			
"Likes doing" something of special interest			
"Likes doing" something utilizing strengths			
"Likes doing" something to get something later			

How well does the student do tlie following tasks? (Indicate approximate time to complete task)

	Good	Fair	Poor
Assemble			
Move item			
Repetitive cleaning			
Sequence cleaning			
Cooking			
Collating			
Typing			
Filing			
Computer work			
Calculator			

What prefereuce/aptitudes for jobs does this student demonstrate? As reported by:

Family members:			
Past experiences:			
Observations:			
Other comments:			
Vocational assets:			
Vocational liabilities and suggestions for support;			
Specific recommendations:			

WORK BEHAVIOR CHECKLIST

STUDENT:.....SCHOOL: .....

EYALVATOR:.....DATE:.....

Code each behavior as MS- Mastered Skill; ES - Emerging Skill; ND-Not Demonstrated

Commnunication:

_____**Communicates** basic needs (i.e. asking for help, accessing **information)**
_____Initiates contact with supervision
_____Relays needed information
_____Understands work routine and expectations

Social Skills:

_____Interacts with co-workers and supervisors
_____Works along-side co-workers
_____Cares for personal hygiene needs
_____Responds appropriately to social contacts
Manaaes free time during breaks

Social Appropriate Behavior:

_____ Works continuously without disruptions
_____Works without displaying/engaging in major disruptive behaviors
_____Accepts **correction/supervision without** becoming upset
_____Exhibits acceptable behavior during break time

Rate and Production:

_____Works **continuously**
_____Leaves job site only at appropriate times

_____Works with limited **supervision**
_____ Works independently and increases production
_____Works without disruptions in group settings
_____Maiutams a reasonable production rate across the day and across time
_____Transitions to new task in reasonable period of time with adequate productivity

Accuracy and Quality:

_____Completes, tasks with sequenced steps
_____Demonstrates consistency over time
_____Demonstrates ability to prepare work area
_____Demonstrates ability to do a variety of tasks and maintain quality

6.6 Let us Sum Up

Autism means a developmental disability. Now Autism is called a Neuro-biological disorder, significantly affecting verbal and non verbal communication and social interaction, generally evident before age 3. It adversely affects a child's educational performance. Other characteristics often associated with Autism are—engagement in repetitive activities, stereotyped motor movements, unusual responses to sensory experiences and resistance to environmental changes. In characteristics of Autism according to DSM IV, Autism in such a developmental disorder under P.D.D., that includes three qualitative deficits- Lack of Socialization, Lack of Communication and Lack of Flexibility. There three are together called 'Autistic Triad' The Assessment of ASD are Clinical Assessment, Behavioural Assessment, Observational Assessment Educational Assessment, Functional Assessment. After assessment of autism should be provide in proper education that's why teaching methods of autism various kinds. These are ABA (Shaping, Modeling, Prompting, Enhancing, Time Out, and Extraction), Curriculum based Assessment and Montessori Method. After schooling the foundational to implementing steps to effective employment training is a focus on generalization children youth with ASD cause experience difficulty generalizing newly learned skills to other settings, situations, people, and environments. Cause as such a critical component of any employment skills program is to develop a sound plan for transfer of skills across settings, persons, contexts and time .So The goal of any training program is behavioral change; that is, if the students are not impacted in a positive way across most aspects of life, the change cannot be considered very meaningful. Adults with Autism need level supports and services analogues by their school age counterparts; particularly important are support employment services and behavioural supports. They rightfully expect to be able to live meaningfully, productive lives.

6.7 Check Your Progress

1. What is Autism?

Ans: Autism means a developmental disability also is called Neuro-hiological disorder and significantly affecting verbal and nom verbal communication and social interaction generally evident before age of 3 **years.**

2. Mention any two or three Signs and symptoms of autism?

Ans: There are many signs and symptoms of autism. These are:

- Doesn't make eye contact (e.g. look at you when being fed).
- Doesn't smile when smiled at.
- Doesn't respond to his or her name or to the sound of a familiar voice.
- Doesn't follow **objects** visually,
- Doesn't point or wave goodbye or use other gestures to communicate.
- Doesn't follow the gesture when you point things out.
- Doesn't make noises to get your attention.
- Doesn't initiate or respond to cuddling.
- Doesn't imitate your movements and facial expressions

3. What is the cause of autism?

Ans: A specific cause is not known, but current research links autism to biological and neurological differences in the brain also environmental influences play role as well also recent researchers have shown that autism does run in families, but not in a clear-cut way.

4. What are the meaning of of 'Autistic Triad'

Ans: Characteristics :

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

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

There three are together called 'Autistic Triad'

5. Write a full from PPD-NOS?

Ans. Pervasive Developmental Disorder Not Otherwise Specified.

6. What are the meaning of Interdisciplinary and Multidisciplinary assessment?

Ans:

- Interdisciplinary assessment requires respect, integration and coordination among professionals with diverse backgrounds. The interdisciplinary team model

is the preferred model in the evaluation and assessment of ASD. The interdisciplinary process involves professionals from various disciplines providing their unique contributions regarding aspects of the child's development and family functioning. The members/ professionals are psychologists, psychiatrists, neurologists, pediatricians, other physicians, speech pathologists, audiologists, occupational therapists, social workers and behavioral and educational specialists.

- Multidisciplinary process/assessment can take with the child and family participating in numerous sessions or it can take place over the course of several months. Professionals in a multidisciplinary process often operate without benefit of collaboration with other team members and often draw separate conclusions based upon'their particular experience and it is a highly stressful process for children and families.

7. In asses the ASD children how many clinical assessment are there?

Ans: There are five assessment are there. These are

- Clinical assessment
- Behavioral Assessment
- Observation Assessment,
- Educational Assessment
- Functional Assessment.

8. Write a full from of A.A.P.

Ans: The American Academy of Pediatrics (AAP)

9. Mention any four or five Principles Instructional Approaches of Autism.

Ans: There are many principles of instructional approaches of autism. These are:

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

Ensure that the program is efficient, consistent, and compatible among providers and settings.

- Program should be outcome-based and evaluation program must be the effectiveness of the child. Make sure the services allow for individualization, and can be validated for the specific child.
- Provide ongoing evaluation of programming and intervention outcomes via performance based assessment and observational data. Have standards for mastery of goals and objectives.

10. Mention the various representative comprehensive programs of instructional approaches of ASD.

Ans: There are six representative comprehensive programs of instructional approaches. These are:

i. Developmental Approach

ii. Applied Behaviour Analysis (ABA)

iii. Structured Teaching

iv. Psychotherapies

v. Sensorimotor Therapy

vi. Play

II. Write a full from of AFBAC. What is the function of this approach and mentions the steps.

Ans: The full from AFBAC is an Applying Functional Behaviour Assessment to Challenging Behaviour.

The function of this behaviour approach is it is functional behaviour assessments (FBA) or functional analysis and positive behaviour supports (PBS) in the treatment of challenging behaviours for children with ASD. The challenging behaviours such as self-injurious behaviour, stereotypic behaviour, physical aggression and tantrums.

A formal approach of Applying Functional Behaviour Assessment to Challenging Behaviour basic steps are:

a. Identifying the challenging behaviour;

b. Identifying antecedents (events before the behaviour occurred), consequences of

the behaviour and setting events which maintain the problem behaviour.

c. Designing an intervention, based on the conclusions of the assessment, which may alter the identified antecedents, consequences or setting events.

12. Mention any three and four stages of The Importance of Promoting Generalization of Vocational education of ADS.

Ans:

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

13. How many stages will be consider in early student with ASD for vocational training.

Ans: There are three stages of vocational training considered. These are:

- **Elementary school years:** Preparation for pre-vocational training starts in elementary school. Children with autism are strong at visual tasks hence they are quick to learn tasks that use this skill. Skills that are useful in developing career awareness and feeling of job satisfaction include: matching, sorting, correcting sorting errors, matching to jigs (instructions using pictures, drawings, words, or a combination), simple alphabetizing, collecting papers, cleaning tables, serving snacks, getting own snack, delivering messages, packaging and assembly and making simple purchases.
- **Intermediate school years:** In the intermediate school years work habits such as attention to task, rule compliance, sustained work on already mastered tasks is important. Systematic typing office work such as collating and sophisticated alphabetizing, measurement, survival signs, money calculations, use of vending machines can be taught. These can be taught in both classrooms and community based settings.
- **High school years:** Skills to learn include self preservation and safety skills, work without supervision and independent movement. The students should receive a combination of classroom instruction and training at varied worksites.

14. How many steps are there school-based employment training for with autism spectrum disorder.

Ans: There are nine steps are there school-based employment training for with autism

spectrum disorder. These are:

- Observe other Programs and Collaborate with other agencies.
- Align your Program with State Standards
- Involve Students in the Planning Process in a Meaningful Way
- Connect the Program to Real-world Experiences
- Create Training Materials and Pre-vocational Tasks that Mimic Real-world Processes
- Use Research-based Training Methods
- Integrate Program within the School Community
- Use Authentic "Real-world" Reinforcement
- Vocational Evaluation Checklist for an Individual with Autism

15. What is the meaning of Integrate Program within the School Community? What are the benefits of this Program?

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

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

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

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

6.8 Unit End Exercise:

1. What is Autism? Describe the details about the Signs, symptoms, characteristics associated with autism spectrum disorders and common characteristics in autism

spectrum disorders.

2. What is Autism? Autism is Treatable? What are causes about the autism? Describe the details about the types of autism and difiential diagnostic feature about the autism and related disorder.
3. What is a tool? Describe the briefly interdisciplinary and multidisciplinary assessment and Different Diagnostic tools for Autism Spectrum Disorder.
4. Describe the details about the assessment of Autism Spectrum Disorder.
5. Describe the details about the instructional approaches of Autism Spectrum Disorder.
6. Describe the details about the teaching methods of Autism Spectrum Disorder.
7. Describe the details about Quality Program Indicators Autism Spectrum Disorder.
8. Describe the details about school-based employment training for with autism spectrum disorder.

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মানুষের জ্ঞান ও ভাবকে বইয়ের মধ্যে সঞ্চিত করিবার যে একটা প্রচুর সুবিধা আছে, সে কথা কেহই অস্বীকার করিতে পারে না। কিন্তু সেই সুবিধার দ্বারা মনের স্বাভাবিক শক্তিকে একেবারে আচ্ছন্ন করিয়া ফেলিলে বুদ্ধিকে বাবু করিয়া তোলা হয়।

—রবীন্দ্রনাথ ঠাকুর

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