CREATING AN INCLUSIVE SCHOOL

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Contents

UNIT I

MEANING AND SCOPE OF INCLUSIVE EDUCATION

1.1. MEANING AND DEFINITION OF INCLUSIVE EDUCATION

In the field of education inclusion means that all children including the ones with disabilities should learn together, in the general education system. Inclusion describes the acceptance of children with exceptionalities in the mainstream of the school system. The concept of Inclusive education begins with the vision that all learners must have equal access to get accommodation in the general education system. The students with individual differences such as unique characteristics, interests, abilities and certain learning needs are included with the normal children. There should be programmes to focus on the restructuring of schools to accept the students with different abilities and other marginalised groups. In inclusive education, the mainstreaming and integration of students are viewed as the ultimate goal of teaching all students together. In inclusive education programme, the specialized instruction and care are provided to any student who is in need of assistance. This programme does not label any student as disabled or exceptional. In other words, no discrimination is made among the exceptional or non-exceptional children. Also, necessary arrangements and accommodations are made for their education in the same school and classes along with their non disabled peers.

The report of Salamanca committee (1994) defines inclusive education as "the recognition of the need to work towards 'schools for all' - institutions which include everybody, celebrate differences, support learning, and respond to individual needs." Inclusive education is defined by UNESCO (1994) as a process of addressing and responding to the diverse needs of all learners by increasing participation in learning and reducing exclusion within and from education. Brooth (1998) viewed inclusive education as a process of increasing the participation of students with learning disabilities in the culture and curricula of mainstream school and communities. Bailey (1998) has reported that inclusion provides facilities to students with disabilities in an ordinary school with other students with the same curriculum in the same classroom.

According to Uppal and Dey (2001), inclusive education implies the synchronization of the educational needs of the normal children and the children with special needs. This is intended to evolve a common curriculum with a view to provide education to all in regular schools. It is a flexible and individualized support system for children and young people with special educational needs.

Advani and Chadha (2003) viewed that Inclusive education aims to provide a favourable setting for achieving equal opportunity and full participation for all. Thus, it brings children with special needs well within the purview of mainstream education. In simple words, it means that all children with or without disabilities learn together.

The Draft Scheme on Inclusive Education prepared by the MHRD (2003) uses the following definition. Inclusive Education means all learners, young people with or without disabilities being able to learn together in ordinary preschool provisions, schools, and community educational settings with appropriate network of support services.

Inclusive education is based on the fundamental human rights. Education is a fundamental human right, and it is enshrined in the Universal Declaration of Human Rights, United Nations in 1998. Children with or without disabilities have the same rights to educational opportunities under the United Nations Convention on the rights of the child. According to Dyson et al (2004) Booth and Ainscow (2002) inclusion in learning institutions involves the following:

i. Valuing all learners equally.
ii. Increasing the participation of learners through cooperative learning, peer tutoring and activity based learning.
iii. Acknowledging the right of learners and reducing class size based on the severity of learner needs.
iv. Reducing exclusion of learners from their culture, curricula and communities of local learning institutions.
v. Restructuring policies, practices and cultures in schools so that they respond to the diversity of learners.

vi. Ensuring adequate teacher preparation and using of authentic assessment approaches and standardized examinations.

vii. Enhancing support services to learners rather than moving them to other services.

viii. Providing an appropriate physical environment and adequate resources for all kinds of students.

ix. Focusing on collaborative role of parents and sustaining relationship between schools and communities.

Thus, inclusion means that students with special needs are admitted in a mainstream education system that admits a wide diversity of learners. Inclusion should thus be seen as a process of addressing and responding to the diverse needs of all children, youth, and adults. This provides increasing participation of students in learning about different cultures and communities, and reducing and eliminating exclusion from education. It involves changes and modifications in content, approaches, structures and strategies with a common motto that includes all children in the regular school system.

Models of inclusive education

The types or models of inclusive education may be categorised as broadly (i) the full inclusive and (ii) the partially inclusive based on the nature of the disabled students in the mainstream system (Mangal,S.K. 2012).

Full Inclusive Model

The concept of fully inclusive mainstreaming education demands that the education of the exceptional on disabled children should be given in the regular classes and schools. Education should be imported to them in the same way and to the same degree as received by the non-disabled children. It is known by the term full inclusion. All types of services for helping the children according to their exceptionality and abnormality should be taken care of as per the needs of the individual children.

Partial Inclusive Model

In partial inclusive model, the disabled students attend regular classes along with their normal peers. They get required support from the teacher, special education expert and itinerant teacher within the classroom set-up. They also get opportunity to attend and avail the services of the special resource room and special classes for some time or some periods apart from attending the regular classes. In some context the disabled students receive their education in special classes meant for their special education. In certain other contexts, a large number of normal children can be occasionally placed with the disabled children to seek academic and non-academic interaction among them for helping each other to understand and adjust to each other's specific needs of life.

1.2. SCOPE OF INCLUSIVE EDUCATION

A well planned inclusive education programme has the potential to meet the diverse educational needs of all children.

The main areas are:

  i.   Children in remote tribal areas
 ii.   Children with disabilities
iii.   Girls living in difficult circumstances
 iv.   Street children
  v.   Children of migrant labours
 vi.   Children with HIV/ AIDS and chronic other illness
vii.   Children of migrant labours
viii. All other children excluded by the society

1.2.1. Features of an Inclusive Curriculum

  i.   It reflects the kind of society that we expect to shape in future and defines the role of education in society.
 ii.   It ensures equity and quality and helps learner diversities and sustains education for all in the long term. Long term approach to organization of curriculum should serve as the integrative aspect to link different forms and types of learning.
iii.   Addresses and incorporates national, local and learner diversities.

iv. Helps to foster a comprehensive citizenship education.

v. Promotes a balance among global, national and local expectations, realities and needs.

vi. Uses different kinds of models of instruction and learning materials.

vii. Fosters appreciation of diversity and tolerance by incorporating principles of non discrimination.

viii. Incorporates content relevant to needs and future of learners.

ix. Discusses education for sustainable development.

x. Presents learning materials that reflect a diversity of viewpoints and representation.

xi. Provides for a wide range of learning opportunities and a variety of learning activities.

xii. Presents learning activities that promote interaction, collaboration and shared reflection among the learners.

xiii. Provides tasks free of culturally and gender based examples for assessment.

1.3. PRINCIPLES OF SPECIAL EDUCATION AND INCLUSIVE EDUCATION

The principles of inclusive education were first adopted at the UNESCO's Salamanca World Conference on Special Needs Education held in 1994 and they were then restated at the Dakar World Education Forum in 2000 as, "...schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. 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".

1.3.1. Special Education Principles

Special education is constructed by a vast array of legal regulations and guidelines for best practices. The following six principles formulated by Individuals

with Disabilities Education Act (IDEA) form the foundation from which all other special education and related services are built.

i. Zero Reject and Free and Appropriate Public Education (FAPE)

It means all students with special needs are entitled to receive a free and appropriate public education and no child may be refused access to free and appropriate public education based on his or her disabilities.

ii. Non discriminatory and Appropriate Evaluation

The evaluation should be completed by a multi-disciplinary team of professionals using more than a single indicator of disability. The evaluation should include a variety of tools and strategies to gather functional, developmental, and academic information.

iii. Appropriate Individualized Education Program

An appropriate individualized education Program should be designed to offer meaningful progress in academic achievement in the general education curriculum and in functional performance.

iv. Least Restrictive Environment

Least Restrictive Environment (LRE) means that environment inside and outside the classroom of regular schools must be barrier free. Students with disabilities must have meaningful access to education as that of students without disabilities. Schools must provide appropriate learning environment and supplementary aids and services to the children with disabilities.

v. Student and Parental Participation

The schools must ensure that parents have the opportunity to be active participants in each step of the special education process. Parents, and (whenever appropriate) the student, must be meaningfully involved in the development and

revision of curriculum, teaching methods, Individualised educational programmes and placement services.

vi. Procedural Safeguards

The IDEA includes important procedural safeguards to ensure that the rights of children with disabilities and their parents are protected and that they have access to the information needed to effectively participate in the process. Parents are entitled to written notices including:

i. A parental rights notice to provide general information about special education, procedural safeguards, and student and parent rights

ii. Major decisions are not to be made without fully informed parental consent (or student consent if the student is of the age of majority).

iii. Ensuring that the rights of students with disabilities and their parents are respected.

1.3.2 Principles of Inclusive Education

Inclusive education is based on the philosophy of Inclusion which holds that society is one and every individual is an equal member of the society. Therefore all persons in the society have equal rights, respect and have to be treated without discrimination whatever may be the individual's personal or subjective conditions, abilities, views, etc.

The fundamental principles are:

i. Every student has an inherent right to education on the basis of equality of opportunity.

ii. No student is excluded from, or discriminated within education on the grounds of race, colour, sex, language, religion, nationality, ethnicity, social origin, disability, birth, poverty or other status.

iii. All students can learn and benefit from education.

iv. Schools should adapt to the needs of students, rather than students adapting to the needs of the school.

v. The students' views are listened to and taken seriously.

vi.   The diversity of needs and pace of development of students are addressed through a wide and flexible range of responses (Sajid, 2009).

1.4. APPROACHES TO INCLUSIVE EDUCATION

1.4.1 Human Rights Based Approach

Human rights approach addresses the social, economic, cultural, civic, and political and protection rights of normal children as well as children with disabilities. It emphasizes both the right to education on the basis of equality of opportunity and the broad aims of education in terms of promoting the all round development of the child. This approach ensure that persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with those of normal children in the communities they live in.

According to UNESCO (2007), the principles of human rights based approach to education are:

1. Universality and inalienability: human rights are universal and an entitlement for all people everywhere in the world.
2. Indivisibility: human rights whether civil, cultural, economic, political or social are inherent to the dignity of every person.
3. Interdependence and interrelatedness: the realization of the rights often depends on wholly or in part on the realization of others.
4. Equality and non-discrimination: all individuals are equal as human beings and by virtue of the inherent dignity, each person is entitled to their rights without discrimination of any kind.
5. Participation and inclusion: All people are entitled to the enjoyment of civil, economic, social, cultural and political development.
6. Empowerment: The goal is to give people the power and capabilities to claim their rights, in order to change their own lives and improve their communities.

7. Accountability and respect for the rule of the law- a right based approach seeks to raise the levels of accountability in the development process.

1.4.2 Multicultural Approach

Multicultural education describes a system of instruction that attempts to foster cultural pluralism. The goal of multicultural education is to help students understand and appreciate cultural differences and similarities and to recognize the accomplishments of diverse ethnic, racial, and socio economic groups.

Multicultural education aims to eliminate prejudice, racism and all forms of oppression. According to Sleeter and Grant (2008), multicultural education addresses issues of privileges, challenges and the status quo, and compels students and teachers to identify on their own biases.

The Dimensions of Multicultural Education

According to Bank (1998), there are five dimensions of multicultural education.

i. Content integration: It deals with how the use of examples and content from a variety of cultures and groups to illustrate key concepts, generalizations, and issues within their subject areas or disciplines.

ii. The knowledge construction process: It describes how teachers help students to understand, investigate, and determine the biases, frames of reference, and perspectives within a discipline.

iii. Prejudice reduction: It includes lessons and activities used by teachers to help students to develop positive attitudes toward different racial, ethnic, and cultural groups.

iv. Equity pedagogy: It deals with how the innovations in teaching- learning process facilitate the academic achievement of students from diverse racial, cultural, and social-class groups. For example Cooperative learning activities help all students, from different racial and ethnic groups work together in teams to pursue common goals.

v. An empowering school culture and social structure: It deals with students from diverse racial, ethnic and gender groups get ensured to experience equality and equal status through various reforms. They are change in the attitudes, beliefs, and action of teachers and administrators, the curriculum and course of study, assessment and testing procedures, and the styles and strategies used by teachers.

According to Hanley (2005), the goals of multicultural approach education are as follows:

i. To make every student achieve to his or her potential.

ii. To learn how to learn and to think critically.

iii. To encourage students to take active roles in their own education by bringing their stories and experiences into the learning scope.

iv. To address diverse learning styles.

v. To appreciate the contributions of different groups who have contributed to the knowledge base.

vi. To develop positive attitudes about groups of people who are different from ourselves.

vii. To become good citizens of the school, the community, the country and the world community.

viii. To learn how to evaluate knowledge from different perspectives.

ix. To develop an ethnic, national and global identity.

x. To provide decision making skills and critical analysis skills so that the students can make better choices in their everyday lives.

1.5 ADVANTAGES AND LIMITATIONS OF INCLUSIVE EDUCATION
1.5.1 Advantages

A well designed Inclusive education provides a lot of benefits to children with disabilities. They are given below.

i. Inclusive educational settings would give a vision to the parents that their children with disabilities would be accepted by their peers, and lead regular lives into a reality.

ii. Children with disabilities would develop a positive understanding about themselves and others when they attend inclusive school along with non disabled peers. The normal children also learn to appreciate diversity.

iii. Inclusive schools would widen friendship circle of disabled children with non disabled children.

iv. Children with disabilities would get an opportunity to learn together with normal children which develops a sense of belongingness and become the part of their community.

v. Children with different abilities are better motivated when they learn in the inclusive schools. It provides better opportunities for learning.

vi. It allows children to work together to accomplish a common goal.

vii. It encourages the involvement of parents in the education of their children and the activities of their local schools.

viii. It enhances the social skills of children with disabilities.

ix. The inclusive classrooms with higher expectations and good instruction provide better opportunity to mastery the academic skills.

x. Children with disabilities can learn in their own pace and style within a inclusive learning environment.

1.5.2. Limitations

i. The regular school teachers lack training in special education to meet the educational, behavioural and physical needs of students with disabilities.

ii. If a student with disabilities is highly problematic, it will adversely affect the learning of the normal students.

iii. If healthy practices are not practiced in the inclusive schools there is a chance for criticism and bullying by the normal students.

iv. In certain contexts it is very difficult for the regular school teachers and students to accept the wide variety of specific needs of children with disabilities

v. Most of the activities designed for the children in the regular schools may not suit to children with disabilities.

vi. Many of the regular schools do not have relevant teaching and learning resources like Braille books, and assistive devices to meet with the educational needs of the disabled children.

vii. Providing a least restrictive environment for the children with disabilities would be a big issue for the regular schools.

viii. Lack of grants and funding by the government and other agencies can hinder the professional development of the regular class room teachers and the specialists.

ix. The negative attitudes of general education teachers, administrators, and stake holders toward students with special needs would also hinder the holistic development of children with disabilities.

Self Assessment Questions

1. Define inclusive education. Discuss the scope of inclusive education.
2. Explain the different approaches to inclusive education.
3. State the principles of special education.
4. Discuss the advantages and limitations of inclusive education.

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UNIT II

PERSPECTIVES AND POLICIES FOR INCLUSIVE EDUCATION

2.1. PERSPECTIVES OF INCLUSIVE EDUCATION

The Constitution of India states that free and compulsory education should be provided for all children until they complete the age of 14 years. The first education commission in India, Kothari Commission (1964–66) addressed issues of access and participation in education by all. It stressed a common school system open to all children irrespective of caste, creed, community, religion, economic condition and social status (Panda, K.C.2007).

The World Health Organisation and the World Bank estimate that one billion children experience some form of disability (WHO & World Bank, 2011). According to Plan International Report (2013), children with disabilities are 10 times less likely to go to school than the other children and be in a segregated setting. The Global Partnership for Education report estimates that 90% of children with disabilities in low and lower-middle income countries do not go to school. Children with disabilities have been excluded from the general education system and placed in 'special schools'. In some cases, they are separated from their families and placed in long-term residential institutions where they are educated in isolation from the community (UNICEF, 2013).

Children with disabilities have very low rates of initial enrolment due to the lack of accessibility of school building and inadequate teaching and learning process. Even if they do attend school, they are more likely to drop out and leave school early without entering the secondary school and beyond due to discrimination from normal peers and society. Moreover they are segregated from the regular school setting. Children with disabilities are also at increased risk of school violence and bullying, preventing the safe enjoyment of their right to education (UNESCO, School violence and bullying: Global status report, 2016).

2.2. NATIONAL POLICY ON EDUCATION (NPE, 1986)

The National Education Policy (1986) followed the Kothari commission's recommendations and suggested the expansion of educational facilities for special children, and the development of an 'integrated programme' enabling handicapped children to study in regular schools. The main objectives of NPE are to integrate the physically and mentally handicapped with the general community as equal partners, to prepare them for normal growth and to enable them to face life with courage and confidence.

Programme of actions of NPE 1986

i.   Provision of education for all children for national development.
ii. Provision of equal educational opportunities to the children with locomotor handicaps and other mild handicaps with that of others.
iii. Provision of special schools with hostels as far as possible at district headquarters, for the severely handicapped children.
iv. Adequate arrangements for vocational training to the disabled to enable them to live with confidence.
v.   Re-orientation of teacher training programmes to deal with the special difficulties of the handicapped children.
vi. Voluntary efforts for the education of the disabled by the voluntary organisations (Panda, K.C. 2007).

2.3. SPECIAL EDUCATION NEEDS AND DISABILITIES ACT, (2001)

The Special Educational Needs and Disability Act (SENDA, 2001), was formulated by the Parliament of the United Kingdom. It was legislated to prevent the unfair treatment to the children with disabilities for the accessibility of education, goods and other services (Debenham, Lucy 2008).

The main objective of this act was that the disabled students were not discriminated against in education, training and any other services which were provided mainly for students. Also the educational institutions run by government and

other organisations should make reasonable accommodation to provide quality education to children with disabilities at all levels (primary to higher education).The act further stated that discrimination occurred when there were no reasonable adjustments to accommodate the children with disability in the schools or colleges SENDA briefed the guidelines for lecturers and teachers in 2011.

The main guidelines were

i. Provision for admission and enrolment of children with disabilities in the regular schools and special schools.

ii. Provision of various student support services.

iii. Provision for training, leisure time facilities and accommodation.

iv. Changing physical features, facilities in the school campus.

v. Changing teaching –learning methods and providing remedial teaching.

vi. Training for communication skills and other services.

2.4 DISABILITY DISCRIMINATION ACT (1995)

The Disability Discrimination Act (DDA, 1995) was amended to protect people with disabilities including blind and partially sighted people from discrimination. The DDA covers key areas of life such as employment and training, education, access to goods, facilities and services, and transport.

The DDA defines disability as "a physical or mental impairment which has a substantial and long-term adverse effect on a person's ability to carry out normal day-to-day activities". This Act covers the disabilities in the following areas:

i. Mobility.

ii. Manual dexterity.

iii. Physical coordination.

iv. Speech, hearing and eyesight.

v. Memory or ability to concentrate, learn or understand.

The types of discrimination addressed by DDA were

i. Direct discrimination (such as a ban on employing blind people).

ii. Disability related discrimination.

iii. Failure by an organisation to make a reasonable adjustment to allow to access to goods, facilities and services.

iv. Victimisation.

v. Harassment.

Disability Discrimination Act in education is responsible for the provision of education and associated services, admissions and conferring qualifications.

The following measures were implemented by the Act

i. Direct discrimination against a person with disability was punishable.

ii. Avoid criticising disabled students related to their disability

iii. Made reasonable adjustments to all policies, procedures and practices to ensure that a disabled pupil/student is not placed at a substantial disadvantage compared to non disabled pupils/students.

iv. Worked towards making school life and the education experience more accessible to disabled pupils/students in terms of premises, the curriculum and information. It was the responsibility of the Department of Education and & Library Boards to produce guidance on accessibility to assist schools with this particular duty.

2.5 PERSONS WITH DISABILITIES ACT (PDA, 1995)

The Persons with Disabilities Act, (1995) was enacted to give an effect to the Proclamation on the Full Participation and Equality of the People with Disabilities in the Asian and Pacific Region. The Proclamation was issued in a meeting of the Economic and Social Commission for Asia and the Pacific Region in December 1992 at Beijing, to launch the Asian and Pacific Decade of Disabled Persons 1993–2002.

The Act listed seven conditions of disabilities. They were blindness, low vision, leprosy cured, hearing impairment, locomotor disability, mental retardation, and mental illness. The Act adopted an approach of social welfare in respect of persons with disabilities and the main focus was on prevention and early detection of

disabilities. The Act also provided 3% reservation in Government jobs and educational institutions. It stressed on creating barrier-free situations as a measure of non discrimination (http://newsonair.nic.in/PWD_Act.pdf).

The above Act stresses the need to provide free of cost education to all children in an appropriate environment till they are 18 years old and further emphasizes their right to measures like:

i.   Transport facilities to the students with disabilities to enable them to attend schools.

ii. The removal of architectural barriers from schools, colleges or other institutions imparting vocational and professional training.

iii. The supply of books, uniforms and other materials to students with disabilities attending school.

iv. The grant of scholarship to students with disabilities.

v.   Setting up of appropriate provision for the redressal of grievances of parents regarding the placement of their students with disabilities.

vi. Suitable modification in the examination system to eliminate purely mathematical questions for the benefit of blind students and students with low vision.

vii. Restructuring of curriculum for the benefit of students with disabilities.

viii. Restructuring the curriculum for the benefit of students with hearing impairment to facilitate them to take only one language as part of their curriculum (https://yourstory.com/2016/05/disabilities-act-simplified).

2.6 RIGHTS OF PERSONS WITH DISABILITY ACT, UNESCO (2006)

UNESCO formulated the United Nations Convention on the Rights of Persons with Disabilities (2006), especially for people with disabilities, including children, and others who are deprived of equal opportunities. This act protects comprehensively the rights of persons with disabilities, including the right to education. The principles of the act discussed under Article 3 are

a) Respect for inherent dignity, individual autonomy including the freedom to make one's own choices, and independence of persons.

b) Non-discrimination.

c) Full and effective participation and inclusion in society.

d) Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity.

e) Equality of opportunity.

f) Accessibility.

g) Equality between men and women.

h) Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities.

The contributions of UNESCO on rights of persons with disabilities in particular right to education are discussed in detail under Article 24.

1. States shall recognize the rights of persons with disabilities to education. With a view to realise this right without discrimination and on the basis of equal opportunity, States shall ensure an inclusive education system at all levels and lifelong learning should be directed to:

   a. The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity

   b. The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential.

   c. Enabling persons with disabilities to participate effectively in a free society.

2. In realizing this right, States shall ensure that:

   a. Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are

not excluded from free and compulsory primary education, or from secondary education, on the basis of disability.

b. Persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live.

c. Reasonable accommodation of the individual's requirements is provided.

d. Persons with disabilities receive the support required, within the general education system, to facilitate their effective education.

e. Effective individualized support measures are provided in environments that maximize academic and social development, consistent with the goal of full inclusion.

3. States shall enable persons with disabilities to learn life and social development skills to facilitate their full and equal participation in education and as members of the community. To this end, States shall take appropriate measures, including:

a. Facilitating 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.

b. Facilitating the learning of sign language and the promotion of the linguistic identity of the deaf community.

c. Ensuring that the education of persons, and in particular children, who are blind, deaf or deaf blind, is delivered in the most appropriate languages and modes and means of communication for the individual, and in environments which maximize academic and social development.

4. In order to help ensure the realization of this right, States shall take appropriate measures to employ teachers, including teachers with disabilities, who are qualified in sign language and/or Braille, and to train professionals and staff who work at all levels of education. Such training shall incorporate disability

awareness and the use of appropriate augmentative and alternative modes, means and formats of communication, educational techniques and materials to support persons with disabilities.

5. States shall ensure that persons with disabilities are able to access general tertiary education, vocational training, adult education and lifelong learning without discrimination and on an equal basis with others. To this end, States shall ensure that reasonable accommodation is provided to persons with disabilities.

In India, The Rights of Persons with Disability Act, 2016 (RPWD Act, 2016) was revised and was passed by both the houses of the Parliament and was notified on December 28, 2016. The main implication of this act was empowerment of persons with disabilities (PWD) and they were given inherent dignity, individual autonomy including the freedom to make one's own choices, and independence. The Act lays stress on non discrimination, full and effective participation and inclusion in society. It also gives acceptance of disabilities, humanity, and equality of opportunity, accessibility, equality between men and women, and respect for the right of children with disabilities to preserve their identities.

2.7 NATIONAL LEVEL PRACTICES ON EDUCATION OF CHILDREN WITH DISABILITIES.

2.7.1 National Policy for Persons with Disabilities (2006)

The constitution of India ensures equality, freedom, justice and dignity of all individuals including persons with disabilities. The national policy for persons with disabilities recognizes that persons with disabilities are valuable human resources for the country and seeks to create an environment that provides them equal opportunities, protection of their rights and full participation in the society. Some of the focused areas in this policy are:

i. Prevention of disabilities.
ii. Rehabilitation measures.

iii. Development of assistive devices.

iv. Social security.

v. Education for persons with disabilities.

vi. Assurance of barrier-free environment.

vii. Promotion of research (http://vikaspedia.in/social-welfare/differently-abled-welfare/national-policy-for-persons-with-disabilities-2006).

Some of the measures discussed in the policy statement for the promotion of education of the persons with various disabilities are:

i. Medium and method of teaching will be suitable to the requirements of the disabled students.

ii. Technical / supplementary/specialized system of teaching/learning should be made available within the school or at a common center easily accessible to a cluster of schools.

iii. Teaching/learning tools and aids such as educational toys, Braille/talking books, appropriate software, etc. will be made available.

iv. Incentives will be given to expand facilities for setting up of general libraries, e-libraries, Braille-libraries and talking books libraries, resource rooms, etc.

v. Sign language, Alternative and Augmentative Communications (AAC) and other modes as a viable medium in inter personal communication will be recognized, standardized and popularized. Efforts will be made so that every child with disability gets suitably exposed to the use of computers.

2.7.2 District Primary Education Project (DPEP)

The government of India launched the District Primary Education Project (DPEP) in 1995, funded 85% by Central government via a World Bank loan and support from the European Community (UNICEF and the UK and Netherlands governments) and 15% by the State governments. The main objectives of DPEP are the universalisation of primary education, particularly for girls and to implement

interventions in primary education in a holistic and coordinated fashion. It also focused on inclusion of children with mild to moderate disabilities in the regular schools. It suggested in-service training to the general teachers to enable early detection of children with disabilities, assessment, use of aids, and making of individual educational plans to the children with disabilities. It gives emphasis on participation of all stakeholders in the education system, such as parents, guardians, teachers, educational administration and voluntary organizations. The programme covers 60 percent of the child population of the country, and spreads over 176 districts in 15 states. By 1998, many states carried out surveys and formal assessment camps, and evolved strategies to provide resource support to children with special needs.

Quality improvement is being attempted through renewal of curriculum and teaching–learning materials, provision of decentralized academic support, and capacity building of teachers. DPEP supports community mobilization and early detection of disabilities, and it emphasizes development of skills and competencies amongst teachers. It has built on resource support at the field level, and stressed the development of innovative designs for primary schools, and provisions for educational aids and appliances. Also it concentrates on the removal of architectural barriers.

The DPEP envisages following measures in this regard:

i. Providing all children, including children with disabilities, with access to primary education either in the formal system or through non-formal education programme.

ii. Facilitating access for disadvantaged groups such as girls, socially backward communities and children with disabilities.

iii. Improving effectiveness of education through training of teachers, improvement of learning materials and upgrading of infrastructure facilities.

iv. Short training of selected primary teachers as regard imparting education to children with disabilities.

v. Appointment of special teachers at district and cluster level for providing support services to class teachers.

vi. Provision of assistive devices and educational devices to these children.

vii. Involvement of experts in disability development in the State Co-ordination Committee.

viii. Orientation of Master Trainers at the State and District level in respect of educational needs of children with disabilities. Improving the quality of education through a process of demand creation for better services.

2.7.3. SARVA SHIKSHA ABHIYAN (SSA) FRAME WORK FOR DISABLED

Sarva Shiksha Abhiyan (SSA) is a project launched by the Department of Elementary Education and Literacy of the Ministry of Human Resource Development, Government of India in 2001, and brought a constitutional amendment in 2002. Sarva Shiksha Abhiyan (SSA) was launched to achieve the goal of Universalisation of Elementary Education. This adopts a zero rejection policy and uses an approach of converging various schemes and programmes. The key objective of SSA is Universalisation of Elementary Education (UEE). Three important aspect of UEE are access, enrolment and retention of all children in 6-14 years of age.

This project had exclusive provision for inclusive education to all children with special needs for achieving its target of universalization of elementary education in the age group of 6-14 years by 2010. SSA, project ensures that every Child with Special Needs (CWSN), irrespective of the kind, category and degree of disability, is provided meaningful and quality education. The goals were that all children aged 6-14

i. will be in some form of education by 2003,

ii. will complete 5 years' primary education by 2007, and

iii. will complete 8 years' education by 2010 (GOI, 2002)

SSA suggested that the educational requirements of the children with special needs would be met by providing adequate resource support to regular schools and giving them an opportunity to receive education in the most appropriate environment. It covers the following components under education for children with special needs: Early detection and identification, functional and formal assessment, Educational placement, Aids and appliances and Support services. It also focuses on Teacher training, Resource support, Individual Educational Plan (IEP), Parental training and

community mobilization, Planning and Management, Strengthening of special schools, Removal of Architectural barriers, Research, Monitoring and Evaluation, and Girls with disabilities.

The project is funded by the government of India and centrally administrated through the Department of Elementary Education and Literacy of the Ministry of Human Resource Development. SSA provides up to Rs.1200/- per child for integration of disabled children, as per specific proposals, per year. Residential bridge courses for CWSN with the main objective of preparing CWSN for schools, thereby ensuring better quality inclusion for them. Facilities for home-based education for children with severe and profound disabilities are provided with the objective of either preparing CWSN for schools or for life by imparting to them basic life skills.

The major functions of SSA

Identification and enrolment:

Household and special surveys have been conducted by all states to identify CWSN. Three million thirty eight thousand CWSN have been identified in 33 States/UTs. Twenty thousand CWSN (66.84 percent of those identified) are enrolled in schools. 77083 CWSN are being provided homebound education in 19 states.

Barrier-free access:

Making schools barrier free to access for CWSN is incorporated in the SSA framework. All new schools to be barrier free in order to improve access for CWSN, is incorporated in the SSA framework. 4.44 thousand Schools have ramps for CWSN. Focus is now on improving quality, monitoring of services provided and retaining CWSN in school.

Simulation Park:

In Tamil Nadu to facilitate inclusion, local schools have been involved in building low cost 'Simulation Park' by using local low-cost material, which can be used by all children. The main aim of this simulation park is to give CWSN and their peers a chance to be able to experience various kinds of play equipment jointly.

Since these play equipments are for the benefit for both disabled and abled children, each Block Resource Centre (BRC) in the State has these items at a low cost. The play equipments can be designed depending on the child's abilities (www.ssanic.in).

Self assessment questions

1. What are the policy guidelines on inclusive education of children with disabilities as per NPE,1986?
2. What are the recommendations of Special Educational needs and Disabilities act (2001) on inclusive education?
3. Discuss the rights of persons with disability.
4. Explain the various National level practices on Education of children with disabilities.

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UNIT III

DIFFERENT LEARNERS IN INCLUSIVE EDUCATION

3.1 DEFINITIONS AND TYPES OF LEARNING DISABILITIES

Learning disabled children are those who have problems in reading comprehension, writing and in solving mathematical problems due to minimal brain dysfunction, brain damage, central processing dysfunction and language delay. Learning disabilities are due to the problems in neurological functions of brain structure which affect a person's ability to receive, store, process, retrieve or communicate information. According to National Joint Committee on Learning Disabilities USA (2005), Learning disabilities as a generic term 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 due to central nervous system dysfunction. Learning disabilities may occur concomitantly with other sensory impairment, mental retardation, visual impairment and hearing impairment but they are not the result of those conditions or influences (Mc Loughlin and Netick, 1983).

Individuals with Disabilities Education Act (IDEA,1997), viewed that the term specific learning disabilities means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written. The disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations. It also includes perceptual disabilities, dyslexia, dysgraphia, dyscalculia, dyspraxia and aphasia. It is due to brain injury or minimal brain dysfunction. But learning disabilities do not include a learning problem that is primarily due to visual, hearing or motor disabilities, mental retardation, emotional disturbance, or of environmental, cultural, or economic disadvantage (Panda, K.C., 2007).

3.1.1. Types of Learning Disabilities

Dyslexia

Disability in reading and comprehension of text material is called Dyslexia. They have problems in understanding phonology, pronunciation, stress and intonation of the language. They often confuse letters, numbers and words with their mirror opposites (b and d, p and q, 3 and E, saw and was, etc.).

Identification

   i.   Difficulty in recognizing letters and words.

  ii.   Skip sentences and words while reading.

 iii.   Misprounce words.

 iv.   Omitting difficult words

  v.   Difficulties in spelling and writing.

Dysgraphia

Writing disability is known as dysgraphia. It is related to poor writing skills of an individual. Lack of proper motor control leads to poor handwriting.

Identification

   i.   Difficulty in copying words from the textbook or blackboard.

  ii.   Poor and illegible handwriting.

 iii.   Very slow writing.

 iv.   Wrong posture of holding pen and position of paper.

  v.   Irregular shapes and sizes of letters.

 vi.   Unfinished writing with omission of word.

 vii.   Difficulty in creative writing.

Dyscalculia

Disability in recognizing mathematical symbols and signs and difficulty in solving problems in mathematics is known as dysgraphia.

Identification

    i.   Difficulties in writing numerals and mathematical symbols correctly.

    ii.   Difficulty in recalling Mathematical formula.

    iii.   Difficulty in counting, doing mathematical calculation and computation work.

    iv.   Difficulty in acquiring proper understanding of basic mathematical concepts like place value, directed numbers, directions and dimensions, measuring units, etc.

    v.   Difficulty in organising and sequencing information to solve problems.

Dyspraxia

Dyspraxia means difficulty in movement and coordination of muscle and motor activities. Usually motor disability leads to fine motor skills (cutting, writing) and gross motor skills (running, jumping). They have problems in their eye-hand co-ordination, balance, and manual dexterity.

Identification

    i.   Inability to coordinate body part to do certain activities

    ii.   Difficulty in colouring and putting things together

    iii.   Poor in skilled activities.

3.1.2 General Characteristics of Learning Disabled

Learning disabilities are primarily described as a deficit in academic achievement, reading, writing, and Mathematics and or language listening or speaking. However, children with learning disabilities may have significant problems in other areas, such as social interactions and emotional maturity attention, hyperactivity, memory, cognition, metacognition, motor skills, and perceptual abilities. The characteristics can be manifested through the life span early childhood through adulthood (Bender, 2008: McNamara, 2007).

    i.   Exhibit difficulties in reading comprehension.

    ii.   Difficultly in acquiring language skills (listening, speaking, reading, writing).

iii. Lack of Mathematical abilities.

iv. Poor reasoning ability.

v. Lack of social skills.

vi. Hyperactivity.

vii. Highly impulsiveness.

viii. Deficits in perceptual motor performance in writing, drawing and copying.

ix. Problems in handling instrument and appliances.

x. High anxiety and mood disorder.

xi. Poor memory and attention.

xii. Lack of higher order thinking skills.

xiii. lack of motivation.

xiv. Inability to generalize and information processing skills.

3.1.3 Causes of Learning Disabilities

Several causes for neurological differences or dysfunction, primarily hereditary factors and trauma experienced before, during and after birth (Hallahan and colleagues, 2005).

1. Genetic factors

2. Organic or physiological factors

3. Environmental factors.

Organic or physiological factors.

Learning disabled children suffer from brain injury or dysfunction of central nervous system.

- Brain damage due to accident before, during or after birth
- Lack of oxygen during birth
- Injury in the spinal cord during birth
- Dysfunction of the central nervous system
- Vitamin deficiency before, during or after birth
- Alcohol consumption and use of drugs like cocaine by the mother

- Lead poisoning

- diabetes, and meningitis

Environmental factors.

- Mal nutrition after birth.

- Pre-mature delivery.

- Diet deficiency in the early age.

- Severe disease, accidents and injuries in the central nervous system .

- Imitation and the company of defective learning models present in one's cultural, social and educational environment.

- Social and cultural deprivation.

3.1.4 Educational Provisions for the Learning Disabled

1. Provision of specialized schools or classes.
2. Provision of special remedial and educational programmes.
3. Provision of regular school with inclusive education

Provision of specialized schools or classes.

There should be special schools or at least separate classes for them where they can be taught by specialized teachers through special methods and techniques essentially on the same curriculum with greater care and attention.

In the specialized schools, there is a provision for special instruction by special teachers for overcoming the learning disabilities. Also instructions related to academic subjects, experiences related to social and co curricular activities are also provided as given to the other normal students.

Provision of special remedial and educational programmes.

Here proper identification regarding the nature, type and degree of learning disabilities could be diagnosed first. After diagnosing the true nature of disabilities proper special remedial and educational programmes for oral expression, listening

comprehension, written expression , basic reading skills, reading comprehension , Mathematical calculation and Mathematical reasoning would be provided.

Provision of regular school with inclusive education

Learning disabled children can be admitted in the regular school with inclusive educational practices. In these schools teacher could use the following principles to teach children with learning disabilities.

i. Teach them how to learn.

ii. Use structured and sequential steps.

iii. Use concrete objects to explain and use audio and visual aids.

iv. Use scaffolding.

v. Provide group work and pair work.

3.1.5 General teaching techniques

i. Use of visual and audio aids.

ii. Use demonstration for explaining certain concepts.

iii. Utilize multisensory learning techniques.

iv. Teach concepts by chunking (Break information down into smaller units).

v. Utilise peer tutoring and cooperative learning.

vi. Make information as concrete as possible.

vii. Provide a small group of instructions.

viii. Use open-ended questions to improve writing skills.

ix. Lay greater emphasis on dialogue and collaboration.

x. Make less use of teacher directed instruction.

3.1.6 Role of the parents

The parents of learning disabled children should prepare to accept the disability of their children recognise the problem. They should diagnose the causes of the disabilities. They should understand the intensity of the disabilities.

The following strategies could be used:

i. Foster self- esteem.

ii. Do not compare the performance of their children with other siblings.

iii. Identify the strength and weakness the children and strengths must be reinforced.

iv. Develop a sense of responsibility.

v. Can provide opportunities for their children to make choices and decisions, and promote self-discipline.

vi. Can help the children deal effectively with their mistakes and failures.

vii. Should attend training programmers along with their children.

3.1.7 Teaching strategies for specific learning deficiencies

Dyslexia

The following strategies could be given to improve their reading disability.

i. Phonetic guidance and drill could be provided to learn the proper sounds of the letters.

ii. Model reading could be given to improper reading style and make them read aloud and silently.

iii. Story telling method, oral discussions and multisensory approach could be practised to improve their reading comprehension.

iv. Dictionary reading could be practiced to improve their vocabulary.

v. Mistakes can be identified and corrected them immediately while reading.

vi. Paired reading and group reading could be practised.

vii. Providing reading tasks by tracing over letters, using the sense of touch, showing pictures along with the word, using toys and other concrete materials along with the word.

viii. Ask the child to listen to a taped lecture or see video-recording of a presentation and then respond to a series of oral or written questions.

ix. Teach metacognitive strategies. Teach children similarities and differences between speech sounds and visual patterns across words.

x. Provide direct instruction in language analysis and the alphabetic code. Give explicit instruction in segmenting and blending speech sounds. Teach children to process progressively larger chunks of words.

xi. Use techniques that make phonemes more concrete

xii. Provide repeated reading tasks for developing fluency.

xiii. Teach for comprehension.

xiv. Teach reading and spelling in conjunction.

xv. Direct instruction and teacher-child interactions should be emphasized.

Dysgraphia

The following measures could be adopted to improve the writing skills.

i. Using manipulative exercise such as writing in sands, modelling through clay games, chalkboard practice to strengthen muscles.

ii. Teach them correct position and form for writing.

iii. Practice could be given them for writing in straight lines using lined paper.

iv. Practice could be given to write legibly by maintaining proper links and gaps between the lines and words and sentences.

v. More time could be given to practise writing

vi. Work sheets could be given to improve hand writing.

vii. Task on expressive writing and Composition process of writing could be given.

viii. Activities for making shapes of the letter using stick could be provided.

ix. Ask students to form letters in wet fingerprint/paint/sand.

x. Coloured chalks and colour pencil could be given to create interest in writing.

Dyscalculia

The following teaching strategies can be used.

i. Try to provide examples and non-examples for the clarification of the fundamental concepts and principles.

ii. Teach right way of doing calculation and solving problems

iii. Use programmed learning material and computer assisted instructions to solve problems.

iv. Practice could be given to use abacus and calculators for the counting and calculation work.

v. Inculcate self-confidence in doing calculations and problem solving.

vi. Provide ample opportunities for drill work and provide immediate feedback.

vii. Provide systematic problem solving steps via structural work sheets, video display or modelling.

viii. Use display charts and tallying games.

ix. Develop speed and accuracy of students through worksheets.

x. Make them learn multiplication tables through number games.

xi. Play instructional math games.

xii. Teach students the relationship between addition and subtraction or multiplication and division.

Attention Deficit and Hyperactive Disorder ADHD

Most of the learning disabled suffer from what is known as attention deficit or inattention. These children do not concentrate on the task of learning. They may be helped in the following ways:

i. These children should be made the focus of the teachers, by making their seating arrangement at the centre of the classroom.

ii. Individual attention and extra observation should be given for their actions and movements in the class.

iii. They should be given enough opportunities for the classroom interaction by asking them to cooperate in the display of aid material, experimenting, etc.

iv. Provide them direct instruction and give clear and precise instructions.

v.   Use interesting methods and involve them in teaching-learning process.

vi.   Teach them to practice self-restraint and overcome inappropriate behaviour.

vii.   Reward the students and make them to participate in favourite activities.

viii.   Shorten the task by breaking one task into smaller parts to be completed.

3.1.8 Specialized Approaches and Techniques for helping the learning disabled

Behaviour Modification of Management Approach

Provide opportunities to modify the undesirable behaviour, through conditioning and reinforcing to desirable learning behaviour.

Psychoanalytic Approach

In this approach, attempts are made to analyse the behaviour of the disabled child and find out the root cause or causes of his learning deficiency. Accordingly, a remedial programme is planned and administered by establishing proper rapport with him.

Clinical or Medical Approach

This treatment model or approach recommends medical treatment/medication as a method of solving the problem faced by the learning disabled children.

Cognitive Training Approach

Addressed also as cognitive behaviour modification and metacognitive strategy instruction, cognitive training approach is aimed to bring desirable changes in covert thoughts of the learning disabled children (instead of bringing changes in overt thoughts as brought by behaviour modification and management approach). A number of techniques, like the following may be used for making use of the cognitive training approach with the learning disabled.

i.   **Self-monitoring:** A learning disabled child is asked to keep track of his or her brain and performance and make him aware of his or her own learning process. Such act of monitoring or taking care of one's progress

may help a learning disabled child to get rid of a particular learning disability such as attention deficit or reading problem.

ii. **Direct instruction**: Direct instruction programmes can be used to improve reading, writing, spelling, Mathematics and thinking skills.

iii. **Graphic organizers and visual displays**: Graphic organizers like graphs, maps, charts, pictures, models, specimen, and diagrams help in providing visual special presentation.

iv. **Guided notes**: Guided notes strategy helps the learning disabled children to acquire improved note taking skills

v. **Mnemonic devices**: Mnemonic devices help to recall of specific academic content

vi. **Cooperative learning**: In this method, the learning disabled may get assistance from their non-disabled peers in learning by learning together

vii. **Self-instructional approach**: Self-learning package like programmed learning text, computer assisted instructions, teaching machines, tape recorder and video disc, etc. can be used to improve the academic learning

viii. **Multisensory approach**: Learning disabled children are taught by appealing to their multiple senses—visual, auditory, touch, smell, taste, etc. depending upon the nature of the subject material and its learning objectives.

3.1.9 Use of Technological devices

Advanced technological devices are used for teaching the learning disabled children based on their specific learning disabilities.

a) *Audio tape and tape recorder:* Helps in pronunciation, proper intonation and way of speaking, etc. Reading, speaking and conversation skills can be better developed with the help of audio CDs and CD players.

b) *Video-disc instruction.* Video discs in the form of continuous motion pictures help for providing useful instruction.

c) *Computer assisted instruction*: Helps in reading, writing, conversation, mathematics, science and other practical oriented subjects and social skills.

d) *Hypertext technology:* Uses pop-up text windows for further desired explanation and understanding of a traditional textbook material.

e) *Hypermedia technology*: computer makes use of a variety of formats to supplement and enrich the text by merging computer and media technologies. One can listen, watch, store, locate, and search the needed information through the application of multimedia application of the computer technology (Mangal,S.K.,2012).

3.2. PHYSICALLY CHALLENGED

3.2.1 Meaning and Definition

Disabilities related to physically challenged are placed under the umbrella category of orthopaedic impairments in IDEA. These include disorders that hinder physical mobility or the ability to use one or more parts of the skeleton muscular system of the body (Freiberg, 2005). All individual sufferings from orthopaedic impairments according to World Health Organization (WHO) exhibit difficulties in terms of locomotion, i.e., moving. Therefore, the term locomotor impairment is also used in place of orthopaedic impairment. According to IDEA 2004, "an orthopaedic impairment must be severe and must adversely affect a child' educational performance. It includes impairments caused by congenital anomalies such as absence of limbs, clubfoot, impairments caused by disease such as bone tuberculosis, poliomyelitis, or impairments due to other causes including amputations, fractures, cerebral palsy, burns, or fractures".

According to Tver and Tver (1991) "An orthopaedic impairment is an impairment that interferes with the normal functioning of bones, joints or muscles."

The Rehabilitation Council of India, Act (1992**)** views "Locomotor (orthopaedic) disability means a person's inability to execute distinctive activities

associated with moving, both himself and objects, from place to place and such inability resulting from affliction of either bones, joints, muscles or nerves." Hunt and Marshal (2002) view "Orthopaedic impairment causing physical disability refers to a condition that incapacitates the skeletal, muscular and / or neurological system of the body to some degree."

Physical impairment children are those who suffer from defects, deformities and disturbances of their muscle and skeletal and nervous system. These may interfere with their normal functioning and adjustment particularly restricting the activities related to locomotion or moving. Thus the orthopaedic disabled require special measures for their well being, adjustment and educational progress.

3.2.2 Identification

The physiological and functional problems suffered by orthopaedic children are quite complex and diverse and their disabilities may be temporary, intermittent, chronic, progressive or terminal and these may differ from child to child. Some of their disabilities are given below:

- Poor muscle control.
- Difficulty in sitting, standing, and walking.
- Frequent pain in joints.
- Deformity in fingers, legs, hands, spine, and neck.
- Amputed limbs.
- Jerking movements in walking.
- Poor motor control.
- Shaky movements.
- Paralysis (total lack of muscular control in part or most of the body).
- Difficulty in picking, holding and putting things.

3.2.3 Causes of Physical Impairments

Causes of orthopaedic impairments are many and varied. Some of the causes are given below:

Environmental causes

Before birth

 i. Poor and defective physical and mental health of the pregnant mothers.

 ii. Maternal malnourishment and nutritional deficiencies, chronic diseases, accidents and injuries caused to mothers.

 iii. Effect of hard drugs such as cocaine, marijuana, intoxicating objects, poisoning, exposure to radioactive rays

 iv. Alcohol consumption, Consumption of tobacco and smoking

 v. Active infection with Sexually Transmitted Diseases (STDs) and Acquired Immune Deficiency Syndrome (AIDS) during pregnancy

During the time of birth:

 i. Premature babies.

 ii. Prolonged delivery leads to brain anoxia (lack of oxygen) resulting into the severe neurological and orthopaedic impairment conditions like cerebral palsy and Seizures.

 iii. Instrumental and forcipes delivery.

After birth

 i. Brain damage.

 ii. Brain fever.

 iii. Viral infection.

 iv. Lead poisoning.

 v. Polio.

 vi. Burns and injuries.

 vii. Diabetes.

 viii. Traumatic spinal cord injury.

 ix. Stroke.

 x. Accidents and injuries.

 xi. Nutritional deficiency.

 xii. Socio-economic conditions.

Very poor economic conditions, lower socio-economic status, illiteracy and unhealthy living conditions damage the normal growth and development which lead to physical impairment

xiii. Child abuse:

Child abuse such as children of tender age are beaten, burned, sexually molested, starved or neglected or brutalized by the elderly ones may cause physical impairment

3.2.4 Various Types of Orthopaedic Impairments

1. **Muscular dystrophy:** The term muscular dystrophy is referred to a group of inherited diseases in which the muscles of the body are subjected to the condition of progressive weakening and wasting away of muscular tissue. As a result the affected child may suffer right from his birth with serious impairments in terms of muscular weakness. It also causes loss of muscular control, contractions, and difficulty is walking, breathing, reaching and use of hands involving strength.

2. **Poliomyelitis:** Poliomyelitis (polio) is an acute communicable disease caused by a viral infection that can invade the nervous system.

3. **Arthritis**: Arthritis is severe pain in and around the joints which affect motion.

4. **Osteogenesis imperfecta**: It is a hereditary disorder that goes in families because of transmission to children by affected parents. It is characterized by improper formation of bones and their easy breaking.

5. **Osteomyelitis:** In this disorder there is a bacterial infection in the child's bone especially in the bones of the arms and legs.

6. **Legg-calve-perthes disease**: It is a disorder 'which a child suffers from the flattening of the head of the femur or hipbone.

7. **Clubfoot:** Clubfoot refers to the musculoskeletal condition of orthopaedic impairment in which one or both feet of a child are turned at the wrong angle at the ankle.

8. **Limb deficiencies (amputation or congenital):** Limb deficiencies resulting into major orthopaedic impairment or disability. This may be present at birth or occur any time later in life.

3.2.5 EDUCATIONAL PROVISIONS OF PHYSICAL IMPAIRMENT

Orthopedically handicapped children do not need any special teaching methods and techniques for teaching learning process. They can be given integrated education in the regular schools. Anyhow the following teaching methods can be adopted.

i. Self learning packages.
ii. Programmed instruction.
iii. Activity based learning.
iv. Peer teaching.
v. Small group discussion.
vi. Combined visual and audio presentations.
vii. Pair work.

Apart from the classroom, other places of curricular and co curricular activities like laboratory, reading room and library, workshops, assembly hall, indoor game facilities, etc. must have adequate provisions and adaptations according to the needs and requirements of orthopaedic impaired children.

3.2.6 Other Provisions

1. **Medical professionals and experts**: Professionals and experts in the field of medicine, surgery, orthopaedic and neurological fields may help in diagnosing, prescribing medication, making recommendation in forms of physical therapy, occupational therapy, orthopaedic, neurological treatment, etc.

2. **Physical therapists**: physical therapists can help in the maintenance of motor skills, movement, and posture through some specific exercises and massages. They also work to relieve pain and difficulty in mobility and improve their physical functioning.

3. **Occupational therapists**: occupational therapists teach useful activities related to self help, daily living, pre-vocational, leisure time, and perceptual motor skills. They also provide instruction in the use of assistive devices and assistive technology.

4. **Guidance and counselling personals**: Their services are needed for providing educational, personal and vocational guidance and counselling to the orthopaedic impaired for helping them with their proper adjustment and rehabilitation.

5. **Social workers**: Social workers and social organizations may help by providing needed adaptive devices and assistive technology, artificial limbs, mobility aids like walking sticks, crutches, walkers, wheel chairs, tricycles, etc.

6. **Parents:** parents should take proper efforts in treatment, education and welfare of the orthopaedic impaired children.

Instructional adaptations:

i. Use of modern technology such as speech synthesizers and computers for participating in class discussion, asking questions and responding to the oral responses.

ii. Use of communication boards, charts having pictures, symbols, numbers or words to indicate their responses to specific items

iii. Use of electrically fitted battery operated mechanism to indicate their preferences for the true/false or multiple response items by the colours of the light switched by them

iv. Provision for a pad of paper than the loose sheets for writing.

v. Provision for securing loose papers through tape, clip board or magnetic devices.

vi. Provision for the use of hand splints or holders, e.g., for helping in pen, pencil or crayon holding.

vii. Provision of a writer.

viii. Teaching the child to use the other hand or even legs, etc

     ix.   Giving the child more time to respond in writing.

     x.   Providing less home work that needs written responses.

Environmental modifications

1. Regular school buildings need to be constructed or modified for the accessibility of wheel-chairs.
2. Proper ramps, walkways, entrance and doorways should be made in the school building.
3. Ramps on steps.
4. Rubber mats over slippery floors.
5. Hand rails.
6. Wide doorways.
7. Foot rests.
8. Hand bars in Toilets and near the drinking water area.
9. Provision for elevators.
10. Transport service with adequate riding and sitting facilities.

3.3. VISUAL IMPAIRMENT

Visual impairment means inability of the eye to see things totally or partially. Visual impairment is defined in terms of visual acuity, field of vision and visual functioning. Visual Acuity refers to the ability of the eye to see details. The visual acuity for distance is measured as the maximum distance at which person can see a certain object, divided by the maximum distance at which a person with normal eyesight can see the same object. Field of Vision refers to the field which both the eyes can easily see in the front. The normal field of vision is 180 degrees in front of eye. Visual Functioning is refers to the degree to which or ability of a person to use vision for all daily activities. Visual ability of the eye to see distant objects clearly is assessed using the Snellen chart, developed by Herbart Snellen, a Dutch doctor. The chart starts with a big E which a normal eye can see at a distance of 200ft. When vision of a person is so impaired he could see the E letter clearly only within 20ft.

According to Individuals with Disabilities Education Act (1993) "Visual impairment including blindness means impairment in vision, that even with correction, adversely affects a child's educational performance. The term includes both partial sight (low vision) and blindness". American Medical Association defines "Blindness is central visual acuity for distance of 20/200 or less in the better eye with correction or, if greater than 20/200, a field of vision not greater than 20 degrees at the widest diameter" (Hatfield, 1975).

Generally there are three types of Vision Impairments

- *Low visual acuity*, also known as *moderate visual impairment*, is a visual acuity between 20/70 and 20/400 with best corrected vision, or a visual field of no more than 20 degrees.
- *Blindness* is a visual acuity of 20/400 or worse with best corrected vision, or a visual field of no more than 10 degrees.
- *Legal blindness* in the United States is a visual acuity of 20/200 or worse with your best corrected vision, or a visual field of no more than 20 degrees.

According to the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 as well as under the National Programme for Control of Blindness (NPCB) Blindness refers to a condition where a person suffers from any of the following conditions, namely:

i. Total absence of sight.
ii. Visual acuity not exceeding 6/60 or 20/200 (Snellen) in the better eye even with correction lenses.
iii. Limitation of the field of vision subtending an angle of 20 degree or worse.

In the words of The Persons with Disabilities Act, 1995, "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". WHO

defines "Low vision are those who suffer visual acuity between 20/200 to 70/200 (Snellen) or 6/18 to 6/60 in the better eye after the best possible correction or a Field of Vision between 20 to 30 degrees".

3.3.1 Identification of Vision Impairment in Children

Children with vision impairments may have the following symptoms

- Keep one eye closed or covered.
- Squints.
- Complain about having trouble seeing things.
- Complain about things being blurry.
- Struggle in reading.
- Hold objects close to their eyes.
- Blinks frequently.
- Losing place easily.
- Difficulty in copying from the board.
- Head turns as reads across the page.
- Skips words or lines unknowingly.
- Red, swollen, or watery eyes.
- Rubs frequently.

3.3.2 Causes of visual impairment or disability

The causes of visual impairment may be both Genetic as well as socio-psychological and physical environment.

Genetic causes

The transformation of defective and inherited genes causes Albinism which results reduced level pigments in the eyes.

- Close blood relationships.

Environment causes

Before birth

- Maternal malnutrition.
- Use of strong drugs.
- Affected by chronic diseases.
- Serious accidents and incidents.
- Stress, anxiety and depression.
- Unhealthy living and socio-psychological environment.

During birth

- Premature delivery.
- Effects of anaesthetic agents.
- Instrumental delivery.
- Infections during delivery.

After birth

- Malnutrition.
- Unhygienic and unhealthy lifestyle.
- Infectious diseases like small pox, chickenpox and measles.
- Eye diseases and infection.
- Deficiency of vitamin A and other nutrition components.
- Fatal diseases like cancer, growth of tumours, typhoid, malaria, etc.
- Reading, writing and working in dim lights.
- Exposure to electronic devices, radioactive substances and rays.
- Excessive watching of TV programmes.
- Working with computers for long time.
- Eye injuries.
- Damage various parts of the eye.
- Ill effects of poisoning and intoxicating substances, alcoholism and drug addiction.

The various types of eye diseases

1. **Cortical Visual Impairment:** "Cortical visual impairment (CVI) is a neurological disorder, which results in unique visual responses to people, educational materials, and to the environment.

2. **Retinopathy of Prematurity:** "Retinopathy of Prematurity (ROP) is an eye disorder affecting premature infants. This disorder was called Retrolental Fibroplasia in the past. ROP affects immature blood vessels of the retina. It occurs weeks after birth.

3. **Optic Nerve Hypoplasia:** "Optic Nerve Hypoplasia (ONH) refers to the underdevelopment of the optic nerve during pregnancy. The dying back of optic nerve fibers as the child develops in utero is a natural process, and ONH may be an exaggeration of that process. ONH may occur infrequently in one eye

4. **Albinism:** Albinism refers to a group of inherited conditions. People with albinism have absent or reduced pigment in their eyes, skin or hair.

5. **Optic Nerve Atrophy:** Optic Nerve Atrophy (ONA) is a permanent visual impairment caused by damage to the optic nerve. The optic nerve functions like a cable carrying information from the eye to be processed by the brain. The optic nerve is comprised of over a million small nerve fibers (axons).

6. **Myopia (near sightedness).** Person who can see objects which are near to him clearly and cannot see the objects which are at longer distance. It is due to the refractive error in the retina.

7. **Hyperopia (far sightedness).** It is also a refractive error in which a person can see the objects at the distant place clearly but cannot see the nearer objects.

8. **Cataract** represents the blurred vision or blockage of vision due to cloudiness in the lens of the eye

9. **Glaucoma.** Blindness due to excess pressure in the retina and optic nerve.

10. **Retinitis Pigmentosa (RP***)*. It is a hereditary disease results in gradual degeneration of the retina.

11. **Coloboma.**   Represents incomplete formation of central and/or peripheral areas of the retina.

12. **Diabetic retinopathy.** Due to diabetes, the blood supply to the retina is blocked.

3.3.3 Educational provisions

i. **Regular class** visually impaired children are taught along with the normal peers with essential adaptation in the environment.

ii. **Itinerant teacher programme:** visually impaired children have additional opportunity to get special instructions individually or in small group from an itinerant teacher , a resource person for looking after the educational needs of the visually impaired children studying in a regular schools.

iii. **Resource room programme**: Here visually impaired children while receiving instructions in the regular class along with their normal peers are required to attend the resource room programmes at scheduled intervals or as per need of the situations.

iv. **Full time special class**: Here in the regular schools, special provision is made to organize full time special classes and activities providing formal instructions to the blind and/or children having low vision under the supervision and guidance of specially trained teachers.

3.3.4 Adaptations in the class room environment

i. **Proper light arrangement should be made.** Avoid glare from overhead lights.

ii. Unnecessary background noise should be minimised.

iii. Eliminate clutter from the room.

iv. Place materials in consistent places so that students know where particular items are always located.

3.3.5 General instructional strategies.

  i. Use Braille books.

  ii. Sensory Training.

  iii. Orientation and Mobility.

  iv. Use large printed textbooks.

  v. Provision for recording the instruction through audiotapes.

  vi. Use electronic text.

  vii. Oral testing could be used.

  viii. Verbalize all the written information.

  ix. Use contrast colour chalk or pen for writing on the blackboard and highlight the main points.

  x. Teach common abbreviations for note taking.

  xi. Use Magnification sheet.

  xii. Increase font size and Zoom the text computer.

  xiii. Ask to use suitable Reading glasses.

  xiv. Use recorded text as needed.

  xv. Place them in a natural lighting. Area.

  xvi. Provision for scribes to assist in reading and completing worksheets.

  xvii. Provide necessary time to complete their written tasks.

  xviii. Tactile and Kinaesthetic Learning could be used.

  xix. Daily Living skills such as dressing, eating, combing, buttoning could be taught.

3.3.6 Assistive devices

- Magnifier.

- Magnifying software for computer.

- White cane.

- GPS-based navigation device.

- Braille systems for reading and writing.

- Screen reader for computer.

- Talking books.

- Talking calculator and computer.
- Audio recorder and player.

3.4 HEARING IMPAIRED CHILDREN

3.4.1 Meaning and types of hearing impaired children

Hearing Impairment is the generic term that has frequently been used to cover the entire range of hearing loss, where as deafness describes a hearing loss that is so severe that speech cannot be understood through the ear alone, with or without aids. Hard of hearing describes individuals who have a hearing loss that makes it difficult, but not impossible, to understand speech through the ear alone, with or without a hearing aids. (Moores, 2007).

The Individual with Disabilities Education Act, USA (1990) views that hearing impairment means impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under the definition of deafness. A hearing loss above 90 decibels is generally considered deafness, which means that a hearing loss below 90 decibels is classified as a hearing impairment. Deafness means a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification that adversely affects a child's educational performance. Hearing impairment means an impairment in learning, whether performance but that is not included under the definition of deafness in this section (IDEA 2004)

Minimal hearing loss which is not included in the federal definition of hearing impairment but which can cause problems for students is defined as loss of between 16 & 25 db. (Kaderavek & Pakulski 2002).

The term hearing impaired means inability of children to hear the sound totally or partially due to the defects in hearing mechanism. *Hearing Impairment* may be

defined as "a generic term indicating a hearing disability which may range from mild to profound" (Brill, Mac Neil and Newman, 1986).

3.4.2Levels of hearing impaired children

- **Mild deafness or mild hearing impairment:** It means that children who can detect sounds between 25 to 40 decibels (dB). They may find it hard to understand others talk.

- **Moderate deafness or moderate hearing impairment**: It means children who can detect sounds between 40-69dB. For them hearing is very difficult without using a hearing aid.

- **Severe deafness**: It applies to children who hear sounds only above 70-89dB. They could use sign language for communication, even if they have a hearing aid.

- **Profound deafness**: It refers to anybody who cannot hear a sound below 90dB is profoundly deaf; some profoundly deaf people cannot hear anything at all, at any level of decibels. Communication is done with sign language and/or lip-reading.

3.4.3 Mechanism of hearing

In the mechanism of hearing process our ears play a major role as a hearing sense organ in gathering sound (acoustical energy) from the environment and to transform that energy in the form of neural energy. The hearing sensation in the form of neural energy is then sent to auditory department of our brain (central nervous system) for its interpretation and as a result we have perception of what we hear.

Structurally, the human ear can be divided into three major parts naming outer or external ear, middle ear and inner ear.
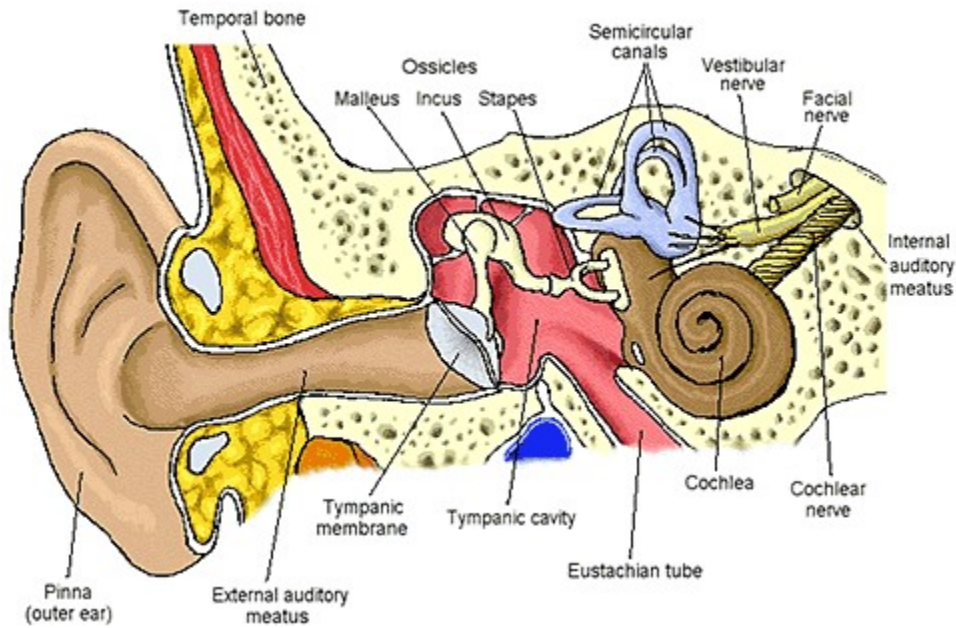
Structure of the Human Ear.

The Outer Ear (Pinna) : It is a funnel like structure and irregular in shape. It consists of the auricle and the external auditory canal. The pinna collects sound waves and then funnels them into the middle ear through the external auditory canal.

The Middle Ear: It consists of the eardrum and three very tiny bones (incus, stapes, malleus) attached on the upper part of Eustachian tube. Sound waves entering through auditory canal cause vibrations in the eardrum and are transferred to the three tiny bones. It provides the path through which sound energy enters the inner ear.

The Inner Ear: The most complex and critical structure of our ear. It is covered by the temporal bone, the harder bone in the entire human body. In its composition, inner ear consists of two main organs; the snail like structure called cochlea and the semi circular canals. Cochlea is filled with the fluid which is subjected to mechanical movement. This motion of the fluid is changed into neural impulses by the tiny hairs present in the cochlea. These neural impulses are further transmitted through the auditory nerve to the brain for interpreting the meaning of the heard sound.

3.4.5 Three Types of Hearing Loss

- Conductive hearing loss: It occurs when hearing loss is due to problems with the ear canal, ear drum, or middle ear and its little bones (the malleus, incus, and stapes).

- Sensorineural hearing loss (SNHL): It happens due to problems of the inner ear, also known as nerve-related hearing loss.

- Mixed hearing loss: It refers to a combination of conductive and sensorineural hearing loss. This means that there may be damage in the outer or middle ear and in the inner ear (cochlea) or auditory nerve.

3.4.6 Causes

Neurological

- Damage in the auditory nerves and bones in the ear.

Hereditary

- Due to Alpert's syndrome and Usher's syndrome (chromosome disorder).
- Close blood marriage.
- Defective gene transformation.

Environmental causes

Before birth

- Maternal rubella (german measles).

- Infectious diseases to the mother such as mumps, influenza.

- Maternal diabetics, kidney and liver problems.

- Overdosage of drugs.

- Brain fever and tumor.

- Over consumption of alcohol by the mother

- Maternal Malnutrition.

During birth

- Prolonged delivery.
- Lack of oxygen.
- Use of forceps in delivery.
- Instrumental delivery.
- Premature delivery.
- Over use of anaesthetic agents during delivery.

After birth

- Measles.
- Mumps.
- Whooping cough.
- Meningitis.
- Typhoid.
- Encephalitis.
- Infections in nasal cavities.
- Ear discharge, etc.

3.4.7 Identification

There is some delay in the development of hearing perception in some children. The following facts show the hearing behaviour of the hearing impaired.

i.   During 6 months, a hearing impaired baby is unable to imitate the voices of others.

ii. By the age of 9 months and above the baby doesn't respond to other sounds.

iii. Poor language and speech development.

iv. Frequent ear aches.

v.   Turns head to one side to hear well.

vi. Difficulty in locating source of sounds or speech.

vii. Deformity of the outer ear.

viii. Deformity of oral facial structures (i.e., cleft palate).

ix. Fluid discharge from ear.

x. Cold and sour throat always.

xi. Inconsistency in following directions.

xii. Always observing lip movement.

xiii. Always ask what? What?.

xiv. Trouble paying attention.

3.4.8 Characteristics

Intellectual

- Average or below average IQ scores.
- Poor thinking and reasoning.
- Lack of concentration and attention.

Academic

- Poor reading comprehension skills.
- Poor word attack skills.
- Difficulty with abstract concepts.
- Low academic achievement.

Behaviour

- Difficulty following verbal directions.
- Inattentive in group activities.
- Isolates himself or be isolated by his peer group.
- Overly dependent on visual cues.
- Has a low frustration tolerance.
- Low self esteem.
- Inferiority complex.
- Anxiety.
- Lack of self confidence.

Communicative Abilities

- Poor Spoken and/or written communications.

- Difficulty in expressing ideas.
- Limited vocabulary.
- Incorrect sentence structure.
- Voice quality may be harsh, breathy, nasal, and/or monotone.

3.4.9 Assessment of the hearing impaired children

Pure-tone audiometry

Early diagnosis, intervention with proper identification is essential to help the hearing impaired at different levels

High risk register

Checking the history of childhood from approved medical reports regarding the infections, defect of ear, nose, throat, birth weight, and any reference to audiological tests.

Pure-tone audiometry

It is a testing procedure for the formal assessment of the hearing losses with the help of an instrument known as audiometer. It can be used for the children about 3 years of age and older.

Speech audiometry

Speech audiometry is a testing procedure for assessing the hearing impairments in which we try to test an individual's ability to detect and understand speech. The dB level at which he is able to understand half of the words is measured and recorded for each ear. In technical language, it is known as the Special Reception Threshold (SRT). Such measures of SRT level can then be utilized for making an estimate of his hearing loss and impairments.

The following are some other techniques

- Screening procedure.
- Cribiogram.
- EEG.

The degree of hearing loss described in terms of slight, mild, moderate, severe and profound are broadly categorized as hard of hearing and deaf.

3.4.10 Early Intervention adjustment

As soon as some hearing loss or impairments are suspected in child by the parents, members or teachers, it should be properly diagnosed and detected with the help audiologist, otologist, ENT specialists, and speech therapist, etc. If needed appropriate medicines, surgery and appropriate hearing aids, could be used. Parents and members of the family should be properly trained and made aware of the developmental needs and adjustment of their hearing impaired children. They must be made to recognize and accept the hearing problems and limitations of their children in the task of their adjustment, development and educational progress by equipping themselves with the needed methods and ways particularly related with the development of communication skills, speech, language and use of hearing aids, assistive technology, etc.

3.4.11 Educational Consideration for the hearing impaired children

Development of Communication Skills:

For the development of desired communication skills among the hearing impaired children, the type of approaches generally employed may be classified as follows:

a) Oral/Aural communication approach.
b) Manual communication approach.
c) Total communication approach.

A. **Oral/Aural communication approach**: This approach advocates that the hearing impaired children should be helped in using oral language. It expects from the hearing impaired children to express themselves and learn to understand others through speech alone. These may include (a) amplification of

sound (b) auditory training (c) speech reading (also known as lip reading) (d) the use of technological aids, and (e) more specifically talking.

B. **Manual communication approach**: This approach advocates the use of manual methods like sign language, finger spelling and cued speech for developing the desired communication skills among the hearing impaired children. Let us try to get acquainted with the use of these methods.

Sign language: Sign language is used for teaching communication skills to the hearing impaired children (especially the most severe and profound ones). It is a special language based on some visual signs.

Finger spelling: Finger spelling is the method of writing or expressing the alphabet of a language manually in the air through the use of the fingers of one's hands. Here, each word of the communication language is spelt out letter by letter through the help of the fixed positions of one's fingers.

Cued speech: This system of manual representation of speech was invented in 1996 by Dr. Orin Cornett Gallaudet College, Washington D.C. Cued speech may be defined as a visual picture of the speech sounds and sound patterns that are used in the English language or any other languages and dialects for which cuing has been adopted.

C. **Total communication approach**: Total communication approach as the name suggests incorporates all the appropriate modes, methods and materials whether aural, oral or manual separately or in combination, which can help in ensuring effective communication with and among the hearing impaired children.

3.4.12 Educational Placement Considerations

In general, the various educational placement alternatives (ranging from least restrictive to most restrictive) available for these children may be named as follows.

1. **Regular classes of the normal schools (total inclusion or mainstreaming):** The hearing impaired children can be admitted in a

regular school and needs and problems faced by the hearing impaired children are handled by a regular class teacher with the help of the experts of the hearing impaired.

2. **Regular classes cum resource room facilities (partial inclusion):** Hearing impaired children (although placed for their education with the normal children in the regular classes) have to spend a part of their school hours in the resource room for meeting their special needs and problems.

3. **Special classes within the regular schools (segregation within the school):** In this, these children are segregated from their non-hearing impaired peers and are placed in special classes running in the regular schools for their education by grouping them together according to their age, ability and interests.

4. **Day schools specially meant for hearing impaired**: These are the schools specially established for the education of the hearing impaired children (mostly deaf) with the facilities of educating and taking care of them at the day time. In such a set-up, the hearing impaired children can get facilities of residing with their families by commuting to the school in the day time.

5. **Residential schools:** Here, hearing impaired children (mostly deaf and suffering from additional disability) are provided with necessary training and education for their adjustment and educational progress along with other hearing impaired children by residing in the school campus.

3.4.13 General teaching strategies and consideration

i. Visual communication modes such as sign language, finger spelling and cued speech could be used.

ii. Training should be given in vocabulary, grammar, word order, idiomatic expressions and other aspects of verbal communication.

iii. Curriculum should have the provision to develop their inner abilities to make them good artists, cartoonists, writers, fashion designers, architects, scientists, and craftsmen, etc.

iv.   Vocational training could be made as a compulsory part of their curricular programmes to make them self-reliant in the future life.

v.   Treat the hearing impaired children in a normal way like other normal children and teach social skills to them.

vi.   Use captioned films/videos, etc. in the instructional process.

vii.   The teachers should try to avoid keeping stylish moustaches, hair styles, ornaments and beards, etc. so that   they can concentrate on cues of communication.

viii.   Teachers should also avoid moving around the room while speaking and reading so that students can properly see their faces for necessary communication clues.

ix.   Use of multisensory approach.

x.   Use of an overhead projector for making the children to take notes

xi.   Repeat the main points with the help of visual presentation.

xii.   Peer tutors may take the responsibility for the preview of the lesson to be delivered by the teacher.

xiii.   Buddy system could be followed.

xiv.   The use of technological advancement such as connecting the sound sensitive switch of a fire alarm, alarm clock and doorbell to a flashing light or to a vibrator for providing alert signals.

xv.   Communication through telephones has now been made possible by the text telephony system. The hearing impaired can make use of mobile phone for sending and receiving text messages across the world for exchanging important information.

xvi.   Modern computer technology could be used in the teaching learning process.

3.5 MENTALLY RETARTED CHILDREN

Children who possess some degree of impaired mental abilities, that are reflected in an IQ score as significantly below average. These children demonstrate less mature adaptive skills such as social behaviour or functional academic skills. Also

their cognitive abilities, ability to learn, abstract   thinking, problem solving skills are limited. Mental retardation was started approximately IQ 70 or 2 standard deviations below the mean.

Page (1976) defined mental deficiency as a condition of subnormal mental development present at birth or early childhood and characterized mainly by limited intelligence and social inadequacy.

British Mental Deficiency Act (1981) defined Mental retardation as a condition of arrested or incomplete development of mind existing before the age of 18 years whether arising from inherent causes or included by disease or injury

American Association on Mental Retardation (1983) view that Mental retardations refer to significantly sub average general intellectual functioning existing concurrently with deficits in adaptive behaviour, and manifested during the developmental period (Grossman, 1983).

Generally the mentally retarded child can be identified through their very low scores on standardized intelligence tests, demonstrating impaired intellectual functioning inadequacy to deal with the demands of environment and defects in adaptive behaviour.

The term mental retardation is now increasingly avoided and it was replaced by the term Intellectual disabilities. According to Schalock et al. (2010), intellectual disability is characterised by significant limitations both in intellectual functioning in adaptive behaviour as expressed in conceptual, social and practical adaptive skills. This disability originates before the age18

3.5.1 Levels of mental retardation

IQ Classifications

Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)
American Psychiatric Association, 1994:

1.	Borderline Intellectual Functioning	IQ 71-84
2.	Mild Mental Retardation	IQ 50-55 to approximately 70
3.	Moderate Retardation	IQ 35-40 to 50-55
4.	Severe Mental Retardation	IQ 20-25 to 35-40
5.	Profound Mental Retardation	IQ below 20 or 25

The terms *Educable Mentally Retarded* and *Trainable Mentally Retarded* used in special education are roughly equivalent to DSM classifications for mild and moderate mental retardation, respectively. The DSM diagnostic criteria further require an assessment and determination of impairment in adaptive functioning in order to make a diagnosis of mental retardation.

Mild mental retardation:

A majority or approximately 85% of the retarded are only mildly retarded. They show signs of delayed development in learning, walking, talking, eating and toileting. They may be identified as slow learners in schools. They have the following behaviour pattern.

- The mildly retarded exhibit.
- Immature behaviour.
- Have poor control over their impulses.
- Lack judgment.
- Fail to anticipate the consequence of their actions.

With early diagnosis, parental assistance, and help of special classes, they can be expected to reach a reasonable degree of educational achievement and to make an adequate social an economic adjustment in the community.

Moderate mental retardation:

Approximately 10% of children have moderate mental retardation. They have the following characteristics.

- Clumsy appearance.
- Poor motor coordination.
- Dull and less initiative.
- Lack of abstract thinking.
- Poor memory and attention.
- Poor reading and writing skills.

Severe mental retardation:

- Nearly 3.5% of children suffer from severe mental retardation.
- They have poor intellectual development.
- Show severe motor and speech deficiency.
- Have Sensory defects and poor motor coordination.
- Poor daily living skills such as eating and dressing.
- Lack of bladder and bowel control.

Profound mental retardation:

1.5% of the total mentally retarded children come under severe category. They are characterized by:

- Deficient intellectual capacities and adaptive behaviour.
- Retarded growth deformities in physical development.
- Severe speech disturbances and motor skills in coordination.
- Unable to manage their physical needs.

Some of the other forms are

1. **Mongolism**: The retardation in them ranges from moderate to severe (IQ approximately 20-25).

2. **Cretinism:** This mental deficiency ranging from moderate to severe retardation results from thyroid deficiency.

3. **Microcephaly**: This refers to mental deficiency associated with the failure of the cranium to attain normal size on account of impaired development of the brain.

4. **Hydrocephaly:** This mental deficiency results from the accumulation of an unusually large amount of cerebrospinal fluid within the cranium, causing damage to the brain and enlargement of the skull.

5. **Phenylketonuria (PHA):** the child, at birth lacks an enzyme needed to break down phenylalanine, an amino acid found in protein foods. Hence there is an abnormal accumulation of phenylalanine in the blood and it causes damage to the brain tissue.

6. **X Linked Mental Retardation or Fragile X Syndrome:** It is X linked in the sense it is caused on account of a chromosomal abnormality related with the presence of the extra X chromosomes, (which appears as if it a fragile and a part of it is breaking off).

3.5.2 Causes of mental retardation

Hereditary

i. Mongolism or Down syndrome and Turners syndrome due to chromosomal anomalies.

ii. Microcephaly due to cranial aberration.

iii. Brain disease such as Neurofibromatosis and Tuberous.

Environmental

Pre-natal period

i. Maternal infections.

ii. Maternal nutritional deficiency.

iii. Emotional suffering of the mother during pregency.

iv. Maternal intoxication.

v. Metabolic and Nutritional disorders of the foetus.

vi.   Over use of drugs.

vii.   Asphyxia: oxygen deprivation and consequently causes suffocation of the tissues.

viii.   Biochemical irregularities such as Phenylketonuria.

ix.   Mother foetal blood group incompatibility such as ABO incompatibility and RH incompatibility.

x.   Frequent exposure to X ray.

During birth

i.   Premature birth.

ii.   Birth injuries.

iii.   Anoxia (lack of oxygen supply) due to prolonged labour.

iv.   Brain injuries due to instrumental or forceps delivery.

After birth

i.   Lead poisoning.

ii.   Infections caused by viruses, bacteria, and fungi.

iii.   Rubella (German Measles).

iv.   Trauma.

v.   Malnutrition.

vi.   Brain fever.

vii.   Brain disease.

viii.   Brain tumours.

ix.   Metabolic and endocrine disorders.

x.   Deprivation due to Low Socio Economic Status.

3.5.3 Preventive measures

i.   Use of Rubella vaccine.

ii.   Early screening and detection.

iii.   Amniocentosis to detect chromosomal aberrations.

iv.   Use of the newborn screening tests.

v. Provision of public education.

vi. Surgical procedure to correct hydrocephaly.

vii. Dietary treatment of PKU and galactosemia.

viii. X ray of the skull and EEG.

ix. Examination of the cerebrospinal fluid.

x. Genetic Counselling and Voluntary Birth Control.

xi. Provision of Normal and Stimulating Environment after Birth.

xii. Proper Care of the Mother and Child.

3.5.4 Behavioural Signs for Identification

i. Small or large head.

ii. Thick fingers or club fingers and toes.

iii. Short nose, open mouth and fissures in the tongue.

iv. Straight hair.

v. Low set of ears.

vi. Moon shaped eyes.

vii. Unwanted disruptive behaviour.

viii. Self-injurious behaviour.

ix. Stout physical appearance.

x. Salivation.

xi. Poor bowel and bladder control.

xii. Hoarse voice or broken voice.

3.5.5 Characteristics of mentally retarded children

Physical Characteristics

i. Limited play activities.

ii. Poor muscle coordination.

iii. Lack of self help skills.

iv. Poor motor activities.

v. Producing unwanted sounds

vi.   Flapping movements

vii.   Repetitive movements

Cognitive Characteristics

Mentally retarded children have been found to lack in the following cognitive functioning:

i.   Slow rate of learning.

ii.   Lack of critical and creative thinking abilities.

iii.   Lack of decision making and evaluation skills.

iv.   Slow speech and language development.

v.   Slow rate of responding.

vi.   Incapacity for comprehension.

vii.   Poor memory and Short attention span.

viii. Poor problem solving skill.

ix.   Difficulty in developing concepts.

x.   Inability to arrive at conclusions.

xi.   Lack of information processing.

Social and Emotional Characteristics

i.   Less imitativeness.

ii.   Poor emotional control.

iii.   Frustration and withdrawal.

iv.   Unusual aggressive behaviour.

v.   Low motivation and less imitativeness.

vi.   Delay in gratification of needs.

vii.   Lack of emotional and social maturity.

viii. poor sensitivity to incidental cues.

ix.   poor self-concept and lack of self-confidence.

x.   Very High anxious and depression.

xi.   Limited interests and aptitudes.

xii.   Limited social interests.

3.5.7 Remedial measures for mental retardation

A mentally deficient is not a person who suffers from a specific disease process but one who by reasons of intellectual arrest or impairment is unable to cope with his environment to the extent that he needs special care, education and institutionalization. The various remedial measures are :

1. **Early intervention and Treatment**

   Early intervention means the screening of the newborn babies comprehensively with suitable tests designed for the diagnosis of metabolic disorders and other problems related mental retardation. Early intervention helps in providing necessary medical, physical and psychological treatment for those children so that they could be saved from severe retardedness. Early intervention can be used for the diagnosis of the following symptoms:

   i. Delay in crawling, sitting, standing, walking or running and speaking.
   ii. Problems in understanding verbal communication.
   iii. Difficulty in daily living skills such as eating, dressing, toilet training, and tying the shoe laces.
   iv. Difficulty in holding a pencil, sharpening the pencils and   in writing.
   v. Deficits in attention, memory and socialization.
   vi. Neurotic or psychotic nature like anxiety, depression, and other behaviour disorders.

2. **Medical or Physical measures**

   The following medical measures are useful for the treatment of mental retardation.

   i. Cretinism can be treated to an extent by using thyroid therapy.
   ii. Congenital syphilis can be controlled by using penicillin therapy

iii. Phenylketonuria can be controlled to a great extent by placing the infant on a special diet relatively free of phenylalanine found protein foods.

iv. Hydrocephalus can be cured using surgical treatment

3. Psychological Treatments

i. Individual or group psychotherapy is found to be useful in providing remedial measures for mental retardation.

ii. Emotional, social maladjustment and conflicts can be treated using counselling.

iii. Cognitive therapy is used for treating the problems in the cognitive functioning of mildly retarded children.

iv. Behaviour management approach is used to treat the behavioural problems. This approach also helps to teach adaptive life skills.

v. Social skill training can be used to teach effective social interactions and appropriate social behaviour of the mentally retarded children.

vi. Activity therapies like music and art therapy, occupational therapy are helpful in building the self concept and positive life experiences of the mentally retarded. It can also help to control the undesirable and disruptive behaviours.

4. Educational Provisions

General educational provisions are applicable for the educational programmes of the mildly retarded children. The main objectives of education for these children are self realisation, human relationships, economic efficiency and civic responsibility. However the mildly retarded children can be admitted in the schools with the provision of special classes. But moderately retarded children can be accommodated in the special schools or Residential special schools. Severe and

profound retarded children can be given home and hospital bound educational programme.

The curriculum of mildly retarded and moderately retarded should include the following areas:

    i. Reading and speaking skills.

    ii. Arithmetic skills.

    iii. Language and communication skills.

    iv. Social skills training.

    v. Vocational training.

While teaching for the children with mild and moderate retarded, the teacher should follow the basic principles of learning

    i. Proceed from simple to complex.

    ii. Proceed from concrete to abstract.

    iii. Proceed from the whole to parts.

    iv. Use of multisensory approach.

    v. Learning by doing.

3.5.8 **The following are the general teaching strategies should be followed in teaching children with mental retardation**

    i. Use concrete materials and real objects to explain the concepts.

    ii. Motivate the students through interesting stories, songs, movies and pictures.

    iii. Allow children to learn according to their own pace.

    iv. Teach one thing at a time.

    v. Drill and practise could be given.

    vi. Content should be presented in small, sequential steps.

    vii. Structured lesson transcripts could followed with visual aids.

    viii. Positive and immediate feedback could be given.

    ix. Use both verbal and nonverbal communication.

    x. More practice could be given through worksheet activities.

Teaching methods for mild and moderate retarded children

i. Peer tutoring.

ii. Small group discussion.

iii. Group learning.

iv. Play way method.

v. Activity based learning method.

vi. Buddy system.

vii. Simulation techniques.

viii. Computer assisted instruction.

ix. Individualized learning programme.

x. Self learning packages.

xi. Programmed instruction.

xii. Use of robotic system.

3.5.9 Specific training for children with severe and profound retarded

Severe and profound mental retarded children cannot be taught in the regular or inclusive schools like mild and moderate category. Those children are termed as trainable mentally retarded. However they could be trained to acquire the following basic skills.

i. Training could be given for dressing skills such as wearing shirts, pants, buttoning, and wearing shoes, socks, etc.

ii. They may be helped to acquire self-help skills like independent eating, defecating, washing and combing hair, brushing teeth, using towels and handkerchiefs, etc.

iii. They may be taught to follow directions and perform simple tasks.

iv. They should be trained to acquire social skills like greeting people, playing with companions, take turns and follow the rules of the road.

v. Training for the development of motor skills and improvement of sensory discrimination.

vi. Household skills like dusting, sweeping, washing of utensils and clothes, ironing, and sewing can be practiced.

vii. Training could be given for personal hygiene, health habits and ceanliness.

3.5.10 Role of the teacher

Mentally retarded students have very low intellectual development and have deficits in language and concept development.

Therefore they need concrete learning style, direct instruction for improving their academic achievement.

Hence while teaching the teacher should do the following

i. Avoid complex sentences.

ii. Use simplified vocabulary, avoiding excessive dialect or idioms.

iii. Express concepts at a literal level.

iv. Ensure that each sentence contains only one main concept.

v. Provide clear, simple instructions.

vi. Highlight important information for easy recognition.

vii. Teach vocabulary with illustrative material (pictures, graphs, etc.)

viii. Use real life pictures where possible.

ix. Offer group work and paired peer activities.

x. Provide summaries of important information.

3.6 AUTISM

3.6.1 Meaning and definitions of the term 'autism'

Generally, the children follow a normal course of their development such as speaking, language acquisition and interacting with their peers and family members. But, some children instead of playing and socialising with others isolate themselves in a world of their own, through certain peculiar behaviour. Due to these features, children land in problems like communication and total lack of social and emotional bonds with others. They are often referred to as the children suffering from a specific developmental disorder named autism. Autism spectrum disorder (ASD) and autism

are both general terms used for pervasive developmental disorders that affect social interactions, language, behaviour. These disorders are characterized, in varying degrees, by difficulties in social interaction, verbal and nonverbal communication and repetitive behaviours. Autism was first described by Leo Kanner in 1943(Webber&Scheuermann, 2008). Though he originally believed that all children with autism have normal levels of intellectual functioning, the research studies have proved that children with autism have got learning difficulties, language disorder, and motor or sensory impairment. Wing (1996) has identified a triad of impairments for autistic spectrum disorders. They are social impairment, communication impairment and flexibility impairment.

According to Webster's dictionary autism is a developmental disorder that appears by age three. It is characterized by impairment of normal social relationships, impairment to communicate with others, repetitive behaviour patterns. Thus, Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before the age of three that adversely affects a child's educational performance. According to Individuals with Disabilities Education Act, (IDEA) (1994), autism is a "developmental disability affecting verbal and non-verbal communication and social interaction, generally evident before age three, that affects a child's performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, unusual responses to sensory experiences."

Autism Society of America (cited in Sturmey and Sevin, 1994) has reported disturbances in the following areas prior to 30 months of age:

  i. Developmental rates and/or sequences.
  ii. Responses to sensory stimuli.
  iii. Speech, language and cognitive capacities.
  iv. Capacities to relate to people, events and objects.

3.6.2 Nature and characteristics of children with autism

Children with autism are generally found to exhibit the following typical characteristics in their overall behaviour and personality.

Cognitive Behaviour

- Deficits in their cognitive skills, and abnormalities in the cognitive behaviour.
- Poor learning skills such as reading, writing and computation skill.
- Poor sensory responsiveness to light, noise, touch and pain.

Social and Emotional Behaviour

Children with autism are found to exhibit much deficit and deficiency in their social and emotional behaviours like the following:

- Not social and outgoing and living in isolation.
- Avoid eye contact and act as if unaware of the coming and going of others.
- Draws no attention and interest on others.
- No emotional touch and feelings on others.
- focus their interest and attention on inanimate objects, figures and pictures .
- No mutual sharing of experiences, activities or even objects with their peers, brothers, sisters, teachers or parents.

Physical Characteristics

- No extraordinary differences in body structure and physiological functioning
- Minor physical anomalies, in ears or eyes.

Communication and Language Behaviour

Children with autism are found to exhibit marked communication and language deficits and deficiencies: They are

- Unusual developmental delays in speech behaviour.
- Difficulties and deficiencies in the use of language—both expressive and/or receptive behaviours.
- Difficulty to understand the spoken language.
- Use of non-verbal means like gestures, vocalization, facial expressions, and sign language for their communication.

3.6.3 Identification signs and symptoms of ASD

People with ASD may

i. Have unusual and repetitive behaviours.
ii. Have overtly focused interests, with moving objects or parts of objects.
iii. Have a lasting, intense interest in numbers, details, or facts.
iv. Upset by a slight change in a routine or new stimulating setting.
v. Have inconsistent eye contact and listen less to people in their environment.
vi. Respond unusually when others show anger, distress, or affection.
vii. Slow to respond to their name or other verbal communications.
viii. Repeat words or phrases that they hear, a behaviour called echolalia.
ix. Use words that seem odd, out of place, or have a special meaning known only to those familiar with that person's way of communicating.
x. Have facial expressions, movements, and gestures that do not match with what they are saying.
xi. Have an unusual tone of voice.
xii. Have difficulties in sensory sensitivity, sleep problems, digestion problems, and irritability.
xiii. Have above-average intelligence and are strong visual and auditory learners.
xiv. Excel in mathematics, science, music, and paintings.

3.6.4 Causes of autism

Genetic Factors

ASD is the result of hereditable genetic differences and mutations. ASD is more common in boys than girls most likely due to genetic differences associated with the X chromosome (Chakrabarti & Fombonne, 2005). Also autistic children have been found to possess specific differences in brain development, specifically in the brain stem.

Neurobiological Factors

Neurobiological differences associated with a diagnosis of ASD include

i. Problems in multiple brain regions, including frontal and anterior temporal lobes, caudate, and cerebellum .

ii. structural and functional abnormalities of the brain, including

    a. Increased gray matter in the frontal and temporal lobes.

    b. Decreased white matter compared with gray matter by adolescence.

    c. anatomical and functional differences in the cerebellum and in the limbic system (Volkmar et al., 2004)

iii. differences in the brain's response to the environment, including

    a. decreased neural sensitivity to dynamic gaze shifts in infancy

    b. preference for non social versus social processing and hemispheric asymmetries in event-related potentials

    c. disruptions in normative patterns of social neurodevelopment that contribute to a diminished attention to social stimuli.

Environmental Factors

i. Drugs and environmental toxic elements

ii. Malnutrition and other dietary factors

iii.   Lead poisoning, polychlorinated biphenyls (PCBs), insecticides, automotive exhaust, hydrocarbons, and flame retardants (Landrigan, Lambertini, & Birnbaum, 2012; Shelton, Hertz-Picciotto, & Pessah, 2012).

Other causes

Below are some other conditions known to be associated with ASD:

i.   Muscular dystrophy – a group of inherited genetic conditions that gradually cause the muscles to weaken.

ii.   Down's syndrome – a genetic condition that typically causes a learning disability and a range of physical features.

iii.   Cerebral palsy – conditions that affect the brain and nervous system, causing problems with movement and co-ordination.

iv.   Infantile spasms – a type of epilepsy that develops while a child is still very young.

v.   Neurofibromatosis – a number of genetic conditions that cause tumours to grow along the nerves.

vi.   the rare genetic condition known as X syndrome, tuberous sclerosis and Rett syndrome.

Assessment of Autism

The diagnosis or identification of autism should essentially be followed by a system of its proper assessment for serving two main purposes:

a.   To help in drawing a complete picture of the nature and severity of this disorder.

b.   To provide information that will form the basis of an appropriate intervention plan for the individual child and family.

In general, the following specific measures may be adopted for the assessment of autism:

1. **Physical and medical assessment:** It may include the following:
   a) Preparing a case history of the child including a thorough birth, developmental, medical and family history including the past and the present of the child.
   b) Subjecting the child to a full physical and neurological examination involving essential laboratory tests and special screening devices such as EEG and brain scan.

2. **Use of checklists and behaviour rating scales:** All the possible behavioural problems associated with autism are available in the form of checklists or behaviour rating scales. These forms should be given for completion to the parents, members of the family, care givers, teachers or the persons who are quite familiar with the child.

3. **Use of the interview technique:** Face to face interaction may prove a quite handy and reliable source for collecting information about the behaviour patterns and problems of an autistic child. These interviews may be held with parents, members of the family, care givers, teachers and even with the child itself.

4. **Use of psychological tests:** Standardized psychological tests may be used for assessing the potential of the child in terms of his cognitive, social, emotional, behavioural and adaptive functions. It may help in providing the information about his deficiencies, delays and deficits in the specific areas of development.

5. **Assessment of communication behaviour:** Since autistic children are mainly identified through the deficits and deficiencies with regard to their communication skills, deliberate efforts should always be made for the systematic assessment of their communication functioning. The range of communication skills assessed for this purpose may involve the following:

a. Child's interest in communication, i.e. what makes him interested in communication.

b. Child's field of communication—the content and context of his communication.

c. How well does the child communicate?

d. How well does the child understand other's communication?

6. **Assessment of academic and learning skills:** The system of formal assessment (use of the standardized tests or teacher made tests) and informal assessment (such as direct observation of the child's behaviour, seeking opinions of the parents, care givers and teachers through rating scale, checklists and interview, etc.) may be usefully adopted for the assessment of child's potential in terms of his learning ability and academic performance. The task may involve the following areas:

a. Assessment of pre-school academic skills (e.g., awareness of the things and events of the environment, shape and letter naming)

b. Assessment of basic academic skills (e.g., reading, writing and arithmetic).

c. Assessment of daily living skills (e.g., eating, dressing, defecating and taking bath).

d. Assessment of learning style and problem solving approaches.

e. Assessment of fine motor skills (e.g., using fingers for picking up small objects).

f. Assessment of gross motor skills (e.g., running, climbing, jumping and catching).

g. Assessment of the functioning of the child's different senses.

3.6.5 Treatment measures for autism

No single method or measure can be adopted for the cure and treatment of autism. It has given birth to a number of treatment measures depending upon the nature of the problems.

Medication and Biochemical Treatment

    i.   An effective medication treatment and pharmacological interventions are widely considered as an important part of treatment protocols.

   ii.   Biochemical intervention like diet based interventions, vitamin based therapies, etc. is provided to eliminate or decrease negative behaviour associated with autism. The doses of vitamins B6, B12 and magnesium and an injection of gamma globulin may be used for this purpose.

Sensory Integration Treatment

In sensory integration therapy, the autistic children are provided with structured experiences and activities that may challenge their ability to respond properly to sensory stimulation. In this way it may help them in getting rid of their improper behaviour regarding sensory stimulation and its integration.

Facilitated Communication Treatment

This therapy is used to improve communication skills by providing opportunities to them for their communication behaviour.In providing this therapy, we may have services of a person, called facilitator, for providing physical assistance to the autistic child in spelling words, using the key board of a typewriter, computer, communication board or other letter displays. The facilitator plays the role of an assistant and offers a physical support to the disabled child.

Treatment Involving Modification and Structuring of Environment

It means arranging a structural environment for providing due support and extensive opportunities for' behavioural expression. Every effort is made to encourage and maintain existing behaviours with an equal emphasis on structured teaching of appropriate new skills often using one-to-one instruction. Structured instruction takes place in context, to support performance within the designated environments. Afterwards, supports are gradually withdrawn as children become more independent.

Treatment Involving Applied Behaviour Analysis

.As a behaviour therapy, its basic principles are classical and operant conditioning and schedules of proper reinforcement and shaping of the appropriate behaviour. By adopting applied behaviour analysis as a technique of behaviour modification, several methods and approaches have been invented for the treatment of the inappropriateness, disturbances and disorders. One of the most popular and widely used methods for this purpose has been invented by the professor and psychologist Ivan Lovass and his colleagues at the University of California at Los Angeles. It is known as Lovass method.

Environmental Modification and Structuring

The following things need to be done for the proper education and adjustment of the autistic children.

(i) The programme and activities of the classroom and other learning places in the school should be well planned and fully structured. There should be fixed time table and schedule of activities and these should be strictly followed. The concept of structured schedule should also be followed at the home with the help of parents.

(ii) There should be essential resource room facilities available for the proper education and adjustment of the autistic children. Services of some special education teachers, psychologists and experts in dealing with autistic behaviour should regularly or on part time basis be availed of for this purpose. The essential teaching-learning aids and equipments that are helpful in the education of the autistic children may also be kept in this room.

(iii) Through applying behaviour modification techniques, they should be made to adapt to the things and habits as done by their non-disabled peers.

(iv) Proper modification can be done for structuring of their environment.

(v) Providing necessary training to the class teachers for the adequate education and adjustment of the autistic children. Therefore, proper pre-service and in service training supported by the assistance of specialized persons should always be provided to the regular school teachers.

3.6.6 Methodology and techniques of teaching and dealing with autistic children

Barnhill (2011) provides the following strategies for working with students with autism spectrum disorder.

(i) Individualized attention and personalized care could be given to meet their specific deficiencies and behavioural needs.

(ii) Use direct instruction to teach multiple meaning of words and idioms.

(iii) Gain the student's attention before communicating with these children in the teaching-learning process.

(iv) Direct social interaction skills and communication, skills, making friends, dealing with frustration, how to participate in conversation could be practiced through certain skill development programme.

(v) Make use of child play as a motivating agent and centre of their education.

(vi) Provide sufficient time and opportunities for repeating and practising the learned things and acquired skills or behaviour.

(vii) Provide clear-cut instructions, rules and procedures to be followed by the students in attending the classroom activities or doing their assigned tasks, etc.

(viii) Provide motivation to his school learning, e.g., making him to read, write about the invention, working and journey by aeroplane, or to make him solve problems in mathematics related to computation work .

(ix) Repeat the teaching use visual images to improve their memory.

3.7 ROLE OF TEACHERS, ADMINISTERS AND ORGANISATION FOR TEACHING AND INSTRUCTING LEARNERS WITH DIFFERENT ABILITIES.

3.7.1 The Major Roles of the Teacher

i. Teachers should accommodate students with special needs based on their level and nature of disability on their Individualized education plans (IEPs).

ii. Teachers should give special attention and support to provide quality education to children with diverse learning needs.

iii. Proper seating arrangement should be provided for the visually impaired students and orthopedically impaired students.

iv. Regular teacher should always have a discussion with the resource teacher and work together to meet the needs of the inclusion students. This collaboration process helps the regular teachers to enhance their knowledge, experience and skills regarding inclusive education.

v. Teachers should have a constant discussion with parents about the progress of their children and address parental concerns.

vi. Teachers should use technological devices to make learning at ease. They can use new learning strategies to meet their educational needs.

vii. The teachers should have the ability to solve the intellectual and emotional problems of the children with specific disabilities.

viii. Teachers should make them participate in co-curricular activities, sports and games.

ix. Teachers should develop self confidence and positive attitude.

x. Teachers should provide special facilities to meet their personal needs.

xi. Teachers should recognize their hidden talents.

xii. Act as a liaison between the students with specific needs and their parents.

xiii. Implement relevant and meaningful learning activities based on the specific needs of the children.

xiv. Maintain the database of child with special needs.

xv. Develop the assessment portfolio of child with special needs.

xvi. Organize continuous, periodic and regular parent meeting.

xvii. Co-ordinate various curricular and co-curricular activities for children with special needs.

xviii. Attend frequent training programmes in the field of inclusive education for updating their knowledge.

xix. Use buddy system and peer teaching method.

xx. Use effective teaching approaches such as Co-operative learning, Peer tutoring and Multi-sensory teaching.

3.7.2 Role of Administrators

The principal or school based administrator should be responsible for managing inclusive environment for instructing as well as holistic development students with different disabilities. Principals should ensure that teachers could receive necessary orientation programmes and refresher courses to teach effectively to the students with special needs. They should also make arrangements for barrier free environment in the school campus so that children with disabilities can move freely. The administrators should organize needed resources and supporting services for effective teaching-learning process. The principals should attend various training programmes to develop skills to solve various problems of students and teachers in the inclusive educational setting.

The major responsibilities of the administrator

i. Observing the implementation of inclusive educational programs for all students.

ii. Assigning duties for staff.

iii. Recruiting sufficient resources teachers for effective teaching.

iv. Admission and enrolment students with disabilities

v. Monitoring the functions of various committees to satisfy the needs of students.

vi.   Arranging placement for students with disabilities.

vii.   Updating the appropriate revisions in the inclusive education and implementing accordingly.

viii.   To implement need based curriculum.

ix.   To develop suitable assessment techniques.

x.   To organise motivational training programme to both teachers and students.

The major duties include the following

i.   To implement the mission, vision and objectives formulated by the institution for providing inclusive education.

ii.   To formulate principles and values for the smooth running of the teaching and learning process.

iii.   To provide leadership for the staff, parents, and students.

iv.   To monitor the school's inclusive educational programmes.

v.   To communicate with school district personnel regarding problems if any.

vi.   To monitor the placement and conduct of students.

vii.   To ensure that teachers get adequate information to satisfy the special needs of children in their classrooms.

viii.   To select special education teacher to support the students and the regular teachers.

ix.   To recognize the need of staff development programmes and makes arrangements for it.

x.   To support the school's responsibility for imparting quality education of all students.

xi.   To monitor the evaluation procedures done by the teachers.

xii.   To acknowledge that all students could benefit from inclusion.

xiii.   To recognize the extra support needs of special needs students.

xiv.   To implement government schemes for those students.

xv.   To seek grand in aids for various resources needed for the students.

xvi. To conduct periodical medical checkups and counselling to those students.

xvii. To provide various therapies to solve the behavioural and emotional problems.

xviii. To provide various assistive devices based on their disabilities.

Self assessment questions

1. What are the various identification procedures for LD children?

2. How would you teach children with specific learning disabilities?

3. Discuss the role of the teacher in teaching learning disabled children.

4. Who is a hearing impaired child? What are the educational provisions for these children?

5. Discuss the causes of hearing impairment and write their characteristics.

6. What are the types of visual handicap? What are the causes and how would you prevent them?

7. Discuss the educational provisions available for visually impaired children.

8. Define mental retardation and state the various categories.

9. Describe the cognitive, social and emotional characteristics of mentally retarded children.

10. What are the various therapeutic measures and instructional techniques used for mentally retarded children?

11. What are the identification signs and educational provisions for physically handicapped children?

12. Define Autism. How will you identify autistic children?

13. What are the characteristics of autistic children? Explain the educational provisions of autistic children?

14. Explain the role of teachers in teaching for the children with disabilities.

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UNIT IV

NEED OF INCLUSIVE EDUCATION

4.1. THE NEED

Students with specific needs (physiological, psychological and educational needs) face lot of barriers in learning in the special and regular schools. Lack of flexibility in curriculum, methods of teaching and technological devices make learners frustrated and create maladjustment problems. In most of special education schools, teachers fail to realize the value of accepting each diverse student as unique. These are the main reasons for the children with disabilities who are not able to get a fair inclusive education. Also a majority of children do not receive any formal education.

Inclusive education opens new ways for schools, classrooms, programs and lessons, so that all children can participate and learn. Inclusive schools provide opportunities to develop relationships, friendships, social skills, personal principles, comfort level with people who have special needs, and caring classroom environments.

In special schools only special curriculum is followed which doesn't satisfy all needs of the learners. In order to develop inclusive education, we need to incorporate children with special needs into regular schools. Inclusive Education is needed for the following causes:

i. To provide better achievement.

ii. To provide better opportunities to develop relationships, friendship and social skills.

iii. To give more caring classroom environments.

iv. To make diverse learners feel cared for, loved, and safe.

v. To provide extra help to low-achieving students by their peers.

vi. To provide equal access to education.

vii. To make them learn along with their same-age peers.

viii. To develop confidence in their ability to interact with one another and the world around them.

ix. To accept all children into regular classes.

4.2. CHALLENGES TO ACHIEVING INCLUSIVE EDUCATION IN INDIA

In India the number of the disabled people are so large, their problems are complex, available resources are scarce and social attitudes are damaging. Getting a better achievement in inclusive education is a long and varied one, on which challenges and opportunities will arise. India is a multi-lingual, multi-cultural, multi-religious country, and its people are stratified along sharp socio-economic and caste lines.

According to official estimates from the Census of India (Government of India, 2011), the number of people with disabilities in the country are 26 million, or roughly 2.1% of the total population. However, UNICEF's Report on the Status of Disability in India (2000) states that there are around 30 million children in India suffering from some form of disability. 10% of the world's population lives with a disability, and 80% of these people with disabilities live in developing countries. But 75% of people with disabilities live in rural areas in India.

The Government has created numerous policies around special education since the country's independence. However, there are many challenges in educating children with disabilities in regular classrooms. They are:

i. Scarcity of adequate human and material resources to provide better education.

ii. Lack of resource teachers and therapists.

iii. Lack of trained teachers on all disabilities.

iv. Negative attitudes of teachers and community, non-disabled peers and their parents.

v. Lack of physical facilities and well equipped resource rooms.

vi. Lack of funds.

vii. Social discrimination.

viii. Emotional problems.

ix. Lack of co-ordination of government policies to implement inclusive education successfully.

x. More number of drop out students due to their parents' poor economic conditions. They are made to work to help their parents.

xi. Large class sizes.

xii. Lack of trained and experienced teachers in special education to teach students with disabilities.

xiii. Lack of support services in the classrooms to teach students with disabilities.

xiv. Poor infrastructure facilities and lack of environmental adaptations to meet the unique needs of students with disabilities

xv. Lack of adequate assistive devices for all categories of disabled students.

4.3. SUGGESTIONS TO ACHIEVE AN EFFECTIVE INCLUSIVE EDUCATION

i. The Right to Education (RTE) can be applied to all children of India. State and central Governments as well as the other social organisations should recognize the importance of inclusive education for the learners with diverse needs.

ii. The government, the NGOs and charitable minds working in such ventures, should focus on providing incentives to the schools, which need support for making inclusion a success.

iii. A policy of inclusion needs to be implemented in all schools and throughout Indian education system (NCF, 2005). Individualized curriculum and instruction could be followed.

iv. The preparation of teachers for rural special education programmes should be planned differently, in order to integrate disabled persons in their own environment and community.

v.   Flexible methods of teaching and materials could be used to give these children the widest possible access to the regular curriculum.

vi.   Strategies to meet the needs of learners with special educational needs could be designed to identify the problems and needs of those learners.

vii.   An inclusive school must enable education structures, systems and methodologies to meet the needs of all children, particularly those who face the greatest barriers to achieving their right to education.

viii.   Parents should be given every right to be involved in all decision-making concerning their children. They should be seen as partners in the education process.

ix.   Transport facilities should be altered, so that these children can move around with relative ease. Architecturally, there should be ramps and wheelchair access constructed in service areas such as toilets.

x.   Student-oriented components, such as medical and educational assistance, books and stationery, uniforms, transport allowance, reader allowance and stipend for girls, support services, assistive devices, boarding and lodging facility, therapeutic services, teaching learning materials, etc. should be provided according to the need of the students.

xi.   Essential support services like services of the special education teachers, experts, resource room facilities, aids and equipment, the environmental modifications as per needs of the disabled children, guidance and counselling facilities, should be well available to the teachers and students working in inclusive set-up.

xii.   Differently abled children should be treated equally as the normal children and instead of looking them with sympathy, their talents and abilities should be recognised for their self-respect and welfare of the society.

xiii.   Necessary learning aids such as audio learning or textbooks in Braille should be made available. Suitable modification to examination system may be required, so as to eliminate pure mathematical and logical assessments.

xiv. In-service training programmes and workshops in specific areas of disability could be arranged to teachers and make it mandatory to all teachers to teach children with disabilities effectively.

xv. Periodic evaluation of the training programmes and constant updating to meet the challenges of changing trends in special education should be part of the planning of teacher preparation.

xvi. The reform of the curriculum should be made in parallel with a proper training for teachers regarding their knowledge of inclusion and its principles.

xvii. Appropriate techniques and strategies like, collaborative team approach, activity based learning, cooperative learning and experiences, data based instruction, creative problem solving, peer to peer supports should be well learned and practised by the teachers while working in the inclusive set-up.

xviii. In case, the need arises, special education services in the form of resource room facilities, individualized guidance and help from the special teacher and professionals may be arranged for the exceptional/disabled children for helping them to remain on track in their learning along within an inclusive set-up.

In this way, if we try to plan and implement the policy of inclusion with utmost sincerity and determination, then it can prove a quite fruitful and viable policy for achieving the national targets of "education for all" and "equal educational opportunities". It will serve the interests of all types of children within the limited means and resources of the country.

4.4. ROLE OF TECHNOGY AND INCLUSIVE EDUCATION

Educational Technology is a great boon for all learners, especially children with special needs to learn and write easily in the inclusive education curriculum. Educational technology emerged as an innovative method and child friendly approach, to increase, maintain, or improve the functional capabilities of individuals with disabilities, and help them to work around or compensate for a disability'

(Goddard, 2004). Technology makes them active participants in the teaching learning process. From a simple device like a magnifying glass, to a complex computerized communication system provide confidence to the students with disabilities in their learning. Technological devices give immediate positive feedback, motivation and focus for students with disabilities. These devices enable students with disabilities to compensate for motor disturbances, organize behaviour, and communicate with a minimum of stress, fatigue, and misunderstanding.

The technological innovations in teaching learning process are called as assistive technology devices. An assistive technology device defined by IDEA as any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain or improve the functional capabilities of a child with a disability. Assistive technology can be considered , low tech and be as simple as using graph paper to help hold spacing during Mathematics problems, or high tech such as use of computer to read text to a student. Assistive technology serves in bridging the gap by 'assisting' in the practice of educating children in the same classroom, including children with physical, mental and develop-mental disabilities (Smith et al., 2011). Assistive technology connects a student's cognitive abilities to an educational opportunity and provides multiple means to complete their work, with greater independence.

Some of the examples of assistive technology devices are touch control devices, alternative keyboards and mouse, speech-to-text word recognition tools, word prediction programs, word processors, grammar checkers, scanners, compact disc recording (CD-R and CD-RW) drives and spell checkers (Petty,2012).Talking software can help a child hear the words while seeing them on the page while reading. Word processing with word prediction helps children with limited vocabulary as well as children whose use of a keyboard is limited by motor impairments.

Assistive devices for visually impaired

Visual impairment is a condition in which the child's vision is deficit to the extent that it significantly affects its routine functioning, optimal learning and adjustment. The degree of visual impairment varies from low vision to total loss of

sight, i.e. blindness. The visually impaired learners need assistive technology according to the degree of impairment they suffer.

The following measures may assist the visually handicapped:

i. ***Computer Screen Magnification:***

Magnified computer screen helps the low vision students to see a particular portion of the screen better and larger.

ii. ***Descriptive video services***:

It helps the learner to hear the description of all the visual elements so that they get better opportunity for knowledge building.

iii. ***Screen Readers***:

It helps to read text passages, and gives phonetic structure of words.

iv. ***Braille Scanning Software(Optical Braille Recognition):***

Optical Braille Recognition (OBR) is a Windows software program that allows to read single and double sided Braille documents on a standard A4 scanner.

v. ***Independent Text Reading:***

Text Reading machines, like the K1000 OCR reading software, convert any printed text into sound and magnify the text for low vision and provide support for reading and writing.

vi. ***Audio devices:***

Cassette players and other recording machines are used to record the lectures, books and study materials and to submit their assignments in audio formats. Talking books and talking calculators are also available.

vii. ***Braille Note-takers:***

These devices are primarily used to take notes in Braille.

Assistive devices for hearing impaired:

The hearing disabled children have different degrees of loss in their auditory ability that range from mild to severe or profound. These children face many problems at schooling because of their disability and thus needs the following assistive devices:

i. ***Personal Frequency Modulation (FM):***
It consists of a transmitter microphone which transmits the sound directly to the hearing aid.

ii. ***Text Telephones:***
They help the learners for texting the phone conversations so that they can read the information.

iii. ***Computerized speech recognition:***
It is software in the computer which can change a spoken message into a readable text document.

Assistive devices for speech impaired children:

Speech impaired children have defects in voice especially in pitch, tone, intensity and rhythm. The following devices would help them:

i. ***Augmentative or alternative communication (AAC):*** AAC is used to enhance the communication process.

ii. ***Picture Exchange Communication System***: It is a kind of communication board which helps the children with autism for their better communication.

iii. ***Hand-held (portable) or computer electronic speech devices***: It can be used to help children with their speech development and verbal skills.

Assistive devices for orthopedically impaired children:

Students who have deformity in limbs, muscles, joints or bones which affect the normal functioning with their environment is called orthopedically impaired They may be assisted with the following devices:

     i.   *Computer Accessibility*

          For easy accessibility of those children technological innovations like trackballs, head trace and touch screens can be used.

    ii.   *Adapted Recreation Equipment*

          Hand cycles help them to operate a bicycle without using their legs.

   iii.   *Access to Classroom or Workspace*

Assistive devices for children having learning disabilities:

Learning disability is a neurological dysfunction that interferes with individual ability to comprehend reading (dyslexia), writing (dysgraphia), calculation (dyscalculia) and in motor co-ordination (dyspraxia). The various technological innovations are:

     i.   ***Abbreviation Expanders:*** This software helps the learner to create, store, and re-use abbreviations for frequently-used words or phrases. Electronic books, Book adapted for page turning, Single word scanners, Predictable texts, Tabs, Talking electronic devices/software, Speech Software can also be used for developing reading skills.

    ii.   ***Paper-based computer pen***: This software records the audio text and enables the user to take notes when someone is speaking. Writing Pen/Pencil grips, Templates, Word processors, Word card/book/wall, software, Spelling/Grammar checker, Adapted papers can be used for developing their writing skill.

   iii.   ***Electronic Math Worksheets***: These help to organize, align, and work through math problems on a computer screen.

4.5. ROLE OF TEACHERS AND ORGANISATIONS IN IMPLEMENTING INCLUSIVE EDUCATION IN INDIAN CONTEXT

Students with diverse needs who are enrolled in inclusive schools have better experiences than the special schools. Inclusive classrooms can promote positive peer

interactions for these students. Teachers play a significant role in satisfying the educational needs of students with disabilities. They provide quality education by using different child centred approaches and technological devices. Teachers use innovative ways to satisfy the educational, social and emotional needs of children with disabilities. They develop effective strategies to overcome the barriers faced by those children in their learning process. This requires the collaboration of classroom teachers, key teachers, school principals, education officers and policy makers.

4.5.1 Role of Teachers in Inclusive Education

    i.   Curriculum Modification:

        Teachers who teach in an inclusive classroom can modify their curricula to meet the needs of their students with specific needs. Curriculum modifications can include the provision of an audio-taped text, shortened assignments and summarized chapters of the textbook as well as tools such as graphic organizers and colour coded chapters to enhance a student's level of comprehension.

    ii.   Communication

        Teachers should communicate regularly with the students to identify specific learning needs, individual student strengths, dignity of the student and other facilities needed for them in the inclusive classroom setting.

    iii.   Classroom Environment

        Teachers could create a safe classroom environment such as grouping, lighting, and seating arrangement to help them for positive socialization.

    iv.   Professional Development

        Teachers could attend in-service training or professional development sessions to hone their skills in curriculum modification, instructional techniques and collaborative teaching strategies that allow

special education teachers, specialists and mainstream teachers to teach the students with specific disabilities..

v. Collaboration

Collaboration could be done between instructional resource teachers and classroom/subject teachers through scheduled meetings. Teachers can consult with medical doctors and counsellors regarding the nature of disability and plan suitable teaching and learning activities.

vi. Assessment strategies

Teachers can select appropriate assessment strategies to assess the students formatively and summatively.

vii. co teaching

Co teaching can be done along with resource teacher and other subject teachers

4.5.2 Roles of various Organisations and NGO's in implementing inclusive education in India

i. National Institutes:
- Teacher training.
- Providing assistance in preparation of teacher training modules.
- Development of awareness material.
- Providing aids and appliances.
- Providing technical assistance in conducting assessment camps.
- Providing services like PT/OT/speech therapy.

ii. District Rehabilitation Centres:
- Provide comprehensive rehabilitation services to the rural disabled persons.

iii. Regional Rehabilitation Training Centres:

- Training and manpower development in the field of rehabilitation of persons with disabilities.

iv. Artificial Limbs Manufacturing Corporation:
- Development and manufacturing of low cost aids and appliances.

v. District Disability Rehabilitation Centres:
- Formal assessment.
- Provision/fitment of aids and appliances.
- Follow up/repair of aids and appliances.
- Therapeutical services like PT/OT.
- Providing orientation training to teachers.
- Community and families.
- Provide referral services to existing educational and training institutions.

vi. Composite Resource Centres:
- Manpower development.
- Fitment of aids and appliances.
- Related services like PT/OT/speech therapy and special education.

Apart from this, NGOs have played a major role for providing education and empowerment of children with disabilities. Formerly they established Special schools and Rehabilitation centres for children with disabilities and training institutes for special education teachers. In India, the government recognized that NGOs were well placed to reach people with disabilities and supported them through various grants in aid (UNICEF, 2003). NGOs became part of the SSA scheme to implement inclusive education in the government run regular schools in many states.

A NGO in the Chennai Corporation (NGO-C) was established in 1985 by a parent of a child with disabilities.

The following services were rendered by the above organisation:

i. Providing education and support services to children with physical handicaps and their families.

ii. Counselling for persons with disabilities and to their parents.

iii. Providing training of teachers to design suitable learning activities. and use of suitable assistive devices.

iv. Management of resource rooms in the Chennai Corporation Schools and implementation of itinerant teaching by resource teachers.

v. Employment and management of resource teachers.

vi. Management of Day Care Centres.

NGO in the Kanchipuram District (NGO-K) was established by a philanthropist in 1979 in the rural area of Kanchipuram District.

Services provided by the NGO-K were:

i. Community based rehabilitation for general villagers.

ii. Inclusive education and itinerant teaching.

iii. Recruitment of mobile teachers for inclusive schools.

iv. Day Care Centres.

v. Special Residential Bridge Courses for children with mental retardation.

Sri Ramakrishna Mission Vidyalaya and IHRDC, Coimbatore, Tamil Nadu.

Inclusive education for children with disabilities has been implemented by Sri Ramakrishna Mission Vidyalaya in collaboration with the International Human Resource Development Center (IHRDC) for the Disabled, in Karamadai Block of Coimbatore District.

The major roles are:

i. Recruitment of Resource teachers and general teachers to implement inclusive education.

ii.   Identification and enrolment of children with mild disabilities in regular schools.

iii.   Undertaking a home-based educational programme.

iv.   Providing Aids and appliances for children with disabilities based on the level and nature of disabilities.

NGOs in Kerala district

They are involved in:

i.   Conduction of Orientation-cum-training programmes for resource teachers, general teachers, administrative personnel, parents and the public.

ii.   Establishment of Multi-grade learning centres, called alternate schools.

iii.   Providing aids and appliances for children with special needs.

iv.   Identifying and enrolling children with special needs in general schools.

v.   Mobilizing resources.

Sir Shapurji Billimoria Foundation, Mumbai, Maharashtra

The Sir Shapurji Billimoria Foundation in Mumbai is an innovative teacher development initiative which was registered in 1998 with the aim of training general teachers to meet the needs of children with disabilities.

The major roles are:

- Promoting awareness, acceptance and feasible techniques for inclusive education.
- Conducting professional training courses in inclusive education for teachers and allied professionals
- Conducting research and documentation in inclusive education and related educational issues.
- Promoting inclusive education by networking with educationists and organizations in India and abroad.

Self assessment questions

1. Explain the need of inclusive education.
2. What are the barriers of inclusive education and state the suggestions for successful implementation of it.
3. Explain the role of technology in inclusive education.
4. Explain the role of various organisation and NGOs that promote inclusive education.

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UNIT V

NEED OF LEARNERS IN INCLUSIVE SCHOOL AND ASSESSMENT OF INCLUSIVE EDUCATION

5.1 SCHOOL ENROLMENT POLICY.

Enrolment of children with specific needs is still a big issue and a challenge to both the children and their parents. Most of the primary and post-primary schools continue to have restrictive enrolment policies that lead to the effectual exclusion of children with special educational needs. Policies and practices may also be in operation within a school that hinder the full participation of children with special educational needs, and there may be a failure to make reasonable accommodations for these students. Some parents of children with special educational needs have experienced difficulty in enrolling of their children in the school of their choice. In this regard, appeals have been made successfully by parents under section 29 of the Education Act 1998.

According to Rights of Persons with Disability Act, schools are strongly advised that their enrolment policies should be revised immediately in conformity with the current statutory requirements and it provides for clear and inclusive enrolment practices and procedures. The schools should develop appropriate dispositions, attitudes and skills for inclusion among the students.

Since education is a fundamental right of all, denying admission due to non-availability of necessary documents is not correct. Sometimes a child may be denied admission because of requirements of some admission procedures like screening, certification, parental interaction, selection and evaluation. However it is one of the best practices for a school to seek all relevant information of a student with special needs before their enrolment. This may be done as part of the admission process. Parents can furnish the necessary documents after the child starts attending the school. In this regard, parents may be requested to provide relevant reports from the child's previous school or reports by professionals who have assessed or who

have provided support services for the child, for example psychologists, speech and language therapists, or occupational therapists. Also the parents are required to submit the following documents such as:

i.   Birth Certificate
ii. Community Certificate
iii. Income Certificate
iv. Disability Certificate (which could specify the nature and type of disability and level)

5.2 ATTENDANCE AND PARTICIPATION.

Schools are advised to maintain a register to monitor the attendance of students with special educational needs, particularly during the early days and months of their first year in the school. Poor attendance is an indicator that a student may have difficulty to adjust the teaching and learning in the regular school. For students who are having difficulty in adjusting, early intervention strategies can be implemented with the objective of preventing more significant difficulties, including early school-leaving. The monitoring of attendance and linking with the educational welfare officer in this regard should be carried out by the principal.

5.3. CODE OF BEHAVIOUR AND DISCIPLINE, AND MEASURES TO PREVENT THE BULLYING OR HARASSMENT OF STUDENTS WITH SPECIAL EDUCATIONAL NEEDS.

Most of the regular as well as inclusive schools may not provide conducive environment for students with special educational needs on their physical and mental health. They are vulnerable to physical, psychological or emotional harassment. When these students are subjected to unhealthy practices and abuses by the teaching and non teaching staff or by peers within the school, their physical and psychological health and academic achievement would be very much damaged.

The inclusive schools should have the tolerance to accept diversity among the students in their educational needs. Each student irrespective of his diverse needs has the right to participate, both physically and psychologically, in a   safe and secure

environment which is free from discrimination, prejudice, harassment, and bullying. The schools must ensure that suitable measures should be maintained to prevent discrimination, harassment, and bullying and also practicable steps are taken to prevent the harassment of any individual in the school. Every inclusive school should have counselling cell and grievance redressel cell to aid code of behaviour and discipline of these students.

5.5 SCHEMES FOR SCHOOLS IN AREAS OF EDUCATIONAL DISADVANTAGE.

i. Scholarship: Scholarship is given to the students with disabilities at elementary, secondary and higher education level by the Government of India.

ii. Scheme of Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP) Scheme: The Union Ministry of Social Welfare in 1981 launched the ADIP Scheme to assist the disabled children in procuring scientifically manufactured aids and technological devices to promote their physical, social and psychological well being.

iii. Initial Experiments on Integrated Education in India: It aims to provide quality basic inclusive education from elementary level, the government of India started various programmes like Project Integrated Education for the Disabled (PIED), District Primary Education Programme (DPEP) and Sarva Shiksha Abhiyan (SSA).

iv. Free textbooks and uniform.

v. Disability friendly transport facilities.

vi. Reader allowance in case of blind children.

vii. Escort allowance for severely disabled children.

5.6 THE VISITING TEACHER SERVICE

In 1970, the Visiting Teacher Service was established to support the education of pre-school and primary school children with hearing impairment. The National Rehabilitation Board (NRB) and other health agencies, appointed special teachers to

visit the children with disabilities in their homes and in the special schools to assist those children.   These teachers are known as visiting teachers and the service rendered by them is termed as the Visiting Teacher Service.   The visiting teachers went into homes, mainstream schools and special schools to diagnose the problems of special children and to provide suitable guidance and counselling on academic, physical and psychological issues. They also assisted the regular teachers in the mainstream schools and special teachers in the construction of curriculum, methods of teaching and in   assessment.

In 1990s The Department of Education and Science expanded this service by including three more areas, i.e. visual impairment, mental and physical handicap. This comprehensive service provides assistance to all pupils with special needs attending mainstream schools at primary, post-primary and third level. It identified the issues like not attending any school education, drop outs, and their related problems. The visiting teacher served as a liaison between the regular teachers or health professionals and the parents.

According to the Development Policy in Special Education, the current roles of the visiting teacher are to

i.   provide accurate, up-to-date information and guidelines for parents and professionals concerning the education of pupils with certain disabilities.

ii.   respond the queries of parents and professionals on education of pupils with disabilities.

iii.   identify developmental and educational goals and expectations, and developing strategies for their attainment.

iv.   employ specialist teaching skills with their pupils, and sharing their skills with classroom teachers.

v.   explore with parents the educational options available and assisting their decision making and giving non-directional advice.

vi.   facilitate the smooth transition into an initial or alternative educational placement.

5.7 GRANTS FOR ASSISTIVE TECHNOLOGY

The Government of India has provided aids and appliances and assistive devices at minimum costs for the social, economic and vocational rehabilitation of the disabled persons particularly after the enactment of the Persons with Disabilities scheme. The main objective of the scheme is to assist the needy and disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances that can promote their physical, social and psychological rehabilitation, by reducing the effects of disabilities and enhance their economic potential.

The scheme is implemented through the eligible agencies. The Agencies are provided with financial assistance for purchase, fabrication and distribution of such standard aids and appliances. The Implementing Agencies will take care of and make suitable arrangements for fitting and post-fitting care of the aids and appliances distributed under ADIP Scheme. The scheme also includes under its ambit, medical/surgical correction & intervention, which is essential prior to fitment of aids and appliances.

The various implementing agencies are:

i. Societies, registered under the Societies Registration Act, 1860.
ii. Registered charitable trusts.
iii. District Rural Development Agencies.
iv. Indian Red Cross Societies and other.
v. Autonomous Bodies headed by District Collector/Chief Executive Officer/District Development Officer.
vi. National/Apex Institutes including ALIMCO functioning under administrative control of the Ministry of Social Justice and Empowerment/Ministry of Health and Family Welfare.
vii. State Handicapped Development Corporations.
viii. Local Bodies- District Autonomous Development Councils and Panchayats.
ix. Nehru Yuvak Kendras.

The Implementing Agencies shall also avail of the professional/technical expertise of above-mentioned agencies for fitment and post-fitment care of the beneficiaries as well as aids/appliances. National Institutes, fitment centers of ALIMCO and DRCs functioning under the administrative control of Ministry of Social Justice and Empowerment shall also assist DRDAs and other autonomous organisations to develop requisite manpower and infrastructure over a period of time to provide satisfactory service to the beneficiaries under the Scheme.

5.8 SPECIAL TRANSPORT

The Government of India has been implementing a centrally sponsored scheme of Integrated Education for the Disabled Children (IEDC) in various States and UTs. The scheme endeavours to achieve the integration of children with 100% financial assistance. It also provides for transport facilities, books and stationery, uniform, instructional material, assistive equipments, and readers facilities for the visually handicapped. It also attends facility for the orthopedically handicapped, special teacher facility, hostel facility for disabled children situated on school campus, removal of architectural barriers in schools, etc.

There is also transport facility to the children with disability or alternative financial incentives to parents or guardians to enable their children with disabilities to attend schools:

i. The schools providing transport facilities to their children should ensure that the children with disabilities get the facilities for wheel- chair using, seat belts and necessary services.

ii. The schools, which are not providing transport facility to their children, should establish a system by hiring/arranging transport vehicles to suit the requirement of children with disabilities studying in their schools.

iii. In case it is not possible to arrange for the transport facility for the children with disabilities, necessary arrangements may be made with the help of parents of the children with disabilities through formation of an association, self-help groups, and citizen welfare groups.

5.9 SCHEME OF REASONABLE ACCOMMODATION

Reasonable accommodation addresses the unique learning needs of the student and at the same time maintains the integrity of the lesson which provides access to the general education curriculum or assessment process (Fisher, Frey, &Thousand, 2003). It is essential to provide reasonable accommodations for the students in academic and non academic areas. Accommodations may range from providing extended time on tests and providing barrier free environment and individualised educational practices. Reasonable accommodation could be made in their attendance too.

Reasonable accommodation means providing necessary and appropriate modification and adjustments to students with disabilities and not imposing a disproportionate or undue burden towards them. Also ensure ample opportunities shall be provided to persons with disabilities on an equal basis with others of all human rights and fundamental freedoms.   Reasonable accommodations could be made in the delivery of instruction, seating arrangements, and method of student assessment (Miller, 2002). Teacher might allow extra time for assignment writing, project completion and for using of suitable assistive technologies. Reasonable accommodation in examination is defined as the actions that enable a student to demonstrate his knowledge and ability in examinations, without changing the demands of those examinations. The granting of reasonable accommodations will ensure fairness to all students and will assist the students to become more independent in their learning.

Some of the Reasonable Accommodations provided to the children with special needs are:

i.   A scribe may be permitted to write down / type the candidates' dictated answers to questions in the examination.

ii.   Candidates could be accommodated in a separate venue from the main exam venue.

iii.   The use of a reader may be permitted for certain children with disabilities.

iv.   A sign language interpreter may be provided to deaf candidates.

v. Granting breaks or rest periods during the examination session

vi. Allow them to take medicine, food or drinks into the examination centre

vii. Allowing the candidate to move within the centre.

viii. Use of a special desk or chair used in the classroom.

5.10 NEED AND PURPOSE OF ASSESSMENT

Assessment applied to the educational setting is the process of observing, gathering, recording, and interpreting information to answer questions and make instructional and legal decisions about students (Cohen & Spenciner, 2007). Assessment has played a critical role in the special education process. According to IDEA (2006), "assessment is a dynamic, continuous process that guides and directs decisions about students with disabilities". According to No Child Left Behind Act of 2001 (NCLB) every child eligible for special education services has "access to the general education curriculum" and "make progress in that curriculum",increased focus on the assessment process that monitors each student's progress.

Teachers play four major roles in regard to school-based assessment and, as a result, need to have skills in all four areas:

a. Teachers are consumers of assessment information—teachers should understand assessment information of every students.

b. Teachers are producers of assessment information—they should generate assessment information by administering tests and conducting observations.

c. Teachers are communicators of assessment information—teachers must share assessment information with professionals, parents and students.

d. Teachers are developers of assessment instruments— teachers would create assessment techniques to accomplish education-related tasks.

5.10.1 Purpose of Assessment

Assessment is critical in each of the major phases of the special education process. During the screening phase, the teachers as well as parents use the informal assessment methods such as observations and interactions to assess the weakness and needs of the student in the natural environment. Then they can consult with the experts who have worked with the child regarding the needs and their problems. Based on this assessment, special education services have to be implemented.

The identifications and eligibility phase of assessment begins based on the referral of the screening phase report. During this phase, the child is formally evaluated by the trained professionals in all areas related to the suspected disability to determine if he or she has a disability and is eligible for special education services. This might include evaluating a student's inability, health, vision, hearing, academic achievement, social and emotional needs, communication, or motor skills (Bateman & Linden, 2007). Formal evaluations are preformed individually by trained professionals. These results are studied by the IEP team along with the information gathered during the screening, pre referral/RTI, and referral phases.

If a student is considered to be eligible, assessment data are needed to identify the unique needs of the child for program planning. Existing data are studied further, and new data may be collected to help the IEP team select goals and objectives or bench marks as well as identify the most effective, research-validated methods of instruction to include in IEP. After the IEP has been implemented, ongoing assessment is conducted to monitor and evaluate the student's progress. The IEP team predetermines the methods used for reporting and decides how often progress will be reported to parents throughout the year. The student is assessed annually to evaluate the outcome of the IEP and provide a measure of accountability. In addition, the student's eligibility or need for services is reconsidered by the IEP team every 3 years. The IEP team may agree that no changes are needed in placement and services and agree not to re evaluate, or it may decide that additional assessments are required to make that decision. The results of each phase of this assessment determine which of several approaches to assessment are used.

The purpose of in-school assessment of students is:

i. to evaluate progress.

ii. to monitor a student's progress.

iii. to establish baseline data in relation to a student's attainments in specific subjects.

iv. to guide a formulation of learning and teaching programmes.

v. to identify students for placement in class groups.

vi. to select students for additional teaching support.

vii. to assess a student's eligibility for additional support and services.

viii. to inform consultations with the school's psychologist.

ix. to assist in the identification of students who may need direct intervention.

5.11 APPROACHES TO ASSESSMENT

The most common methods of gathering information on students are formal or informal.

5.11.1 Formal Assessment: formal assessment is done during beginning stage of the process for identifying the nature and level of disability of the students and then they are referred for the comprehensive evaluation. Formal assessment instruments have detailed guidelines for administration, scoring, and interpretation. They are most often norm-referenced; that is, the tests provide quantitative information comparing the performance of an individual student to others in his or her norm group (determined for example, by age, grade, or gender). These tools are most useful for early assessment. These are useful for placement decisions and to identify student's strengths and weaknesses.

5.11.2 Informal Tests: Informal assessment measures are usually unstructured than formal instruments and are more closely tied to teaching. Such tools are typically devised by teachers to determine what skills or knowledge a child possesses. Their key advantage is the direct application of assessment data to instructional programs. By incorporating informal tests and measurements and by monitoring students'

responses each day, teachers can achieve a more accurate assessment of growth in learning or behavioural change (Overton, 2009). Informal methods are useful for assessing aspects of a student's general behaviour, social interaction with others, and organisational skills. Informal methods are highly useful in monitoring a student's progress and in diagnosing specific strengths, needs, and learning preferences.

Informal methods of assessment include classroom written and oral tests, evaluation of homework, assignment and projects, Individual work, pair work, and group work, Think Pair Share, peer teaching, group discussion, quiz, oral and written tests, games, creative activities, role playing techniques, testing of students' language and social development activities.

5.11.3 Diagnostic assessment

Diagnostic assessment is done to measure the difficulty in learning certain concepts. The objective of diagnostic assessment is to identify the student's learning strengths and needs. It is also used to identify the weaknesses of the child in particular area such as lack of attainment in language, mathematics, social development, and communication skills. Diagnostic assessment can be done before and after the teaching. The school diagnostic assessment by teachers of students with special educational needs can be carried out through the use of either formal or informal methods of assessment such as written tests, oral tests, observations. Diagnostic assessment provides feedback to students to improve their learning. Teachers can design remedial teaching programme through different child centred strategies to enhance their learning.

5.12 ROLE OF THE GENERAL EDUCATION TEACHER IN ASSESSMENT

The teachers should apply the following strategies in the assessment process.

- Special education teachers and school psychologists should be committed to clarifying the nature of the assessments used in the interpretation of the results.

- Encourage family participation in school activities to better understand values and differences, and let parents know that their input is valued.

- Formal test data should not be allowed to contradict on-going observations in the classroom about a student's ability, achievement, and learning patterns.

- Consider issues of possible bias.

- Avoid viewing assessment as a means of confirming a set of observations or conclusions about a student's difficulties.

5.13 DEVELOPING A WHOLE-SCHOOL POLICY ON ASSESSMENT

The assessment of students is an integral part of teaching. Teachers can use formal, informal and diagnostic assessment methods. In recent years the National Council for Curriculum and Assessment has proposed that the School examinations should take into account of the special learning needs of students with special educational needs, and test items should be matched to students' capacities. In relation to certificate examinations, a student with special educational needs may be entitled to reasonable accommodations. Teachers are advised to make themselves familiar with the procedures governing reasonable accommodations in certificate examinations (RACE). Where a student has been granted an accommodation for a certificate examination, sufficient opportunity should be provided for him to become familiar with the accommodations to be used. The following strategies should be followed while assessing and recording and reporting the assessment results the students:

i. The methods to be used in the school should include the selection of appropriate test instruments, for assessing the progress of students in the various areas of the curriculum.

ii. Students with significant learning needs need to be referred to an educational psychologist.

iii. Everything should be recorded in a positive and sensitive manner of the test results achieved by all students, including those with special needs.

iv. The test results should be communicated within and outside the school should be done with the agreement of the relevant psychologist.

v. The school should establish formal procedures in relation to receiving and storing information on individual students from primary to post-primary schools. It should also record assessment information such as psychological reports and relevant test results, school reports, and other confidential information relating to students.

vi. The school should also establish formal procedures within the school regarding the right of access to and the use of psychological reports on individual students.

5.14 SELECTION AND USE OF APPROPRIATE TEST INSTRUMENTS

Teacher should give due importance for the selection of appropriate test instruments for evaluating the children with disabilities. The teacher should understand the purpose of the assessment. Normally two types of tests are used. They are norm referenced tests and criterion referenced tests. Norm referenced test is to compare students' performance and to determine relative strengths and weaknesses of students based upon the generalized skills being measured by the test. In contrast, criterion referenced tests determine "what test takers can do and what they know, not how they compare to others" (Anastasi, 1988).

Just as curriculum adaptations, teaching strategies need to be adapted to suit learning needs of each child in the classroom, and methods of evaluating their performance must undergo modifications too. Some relevant points to keep in mind in this regard are:

a) Children with special needs in the classroom should be assessed on their individual abilities and progress. Unfair comparisons with other children should be avoided.

b) Criterion-referenced testing methods may be adopted.

c) Evaluation should be conducted on a regular basis using several criteria instead of just one. Substituting written exercises with oral assessment, discounting spelling errors, providing a scribe, giving extra time during examinations, reducing syllabi,

exemption from studying some topics or including non-academic activities as criteria for assessment could be options that may prove useful based on each child's ability and learning.

Legal Requirements for Assessment: One of the greatest challenges for special educators is accurately assessing culturally and linguistically diverse students for disabilities. The majority of the requirements are regarding fair testing practices to ensure non discriminatory testing.

Following are the highlights of IDEA related to evaluation and assessment (Smith.E.C. et al. 2011).

  i. Assessment materials must be selected and administered so as not to be racially or culturally discriminatory.

  ii. Test must be administered in the language and form most likely to accurately reflect what the child knows and can do developmentally, academically, and functionally.

  iii. No single procedure or test can be the sole criterion for determining eligibility for special education.

  iv. The student must be assessed in all areas of suspected disability. These areas might include health, vision, hearing, social and emotional status, intelligence, academic performance, communication status, and motor abilities.

  v. Information provided by parents and measures other than "tests" must also be considered.

For selecting the tool for evaluation, the two main steps are kept in mind. The first step in attaining competency in selecting appropriate tests involves understanding the purpose for which an assessment is given. The second step in selecting an appropriate quality test. The quality of a test depends on the following aspects (Mc Divitt, Jo Patricia. & Donna Gibson).

  i. Purpose: the purpose of the test should be clearly defined.

ii. Validity: it means the degree in which an assessment measures what it intends to measure.

iii. Reliability: means the degree of consistency of the assessment results.

iv. Alignment with the curriculum: the test should measure the students' mastery of learning based on the curriculum. The test questions should measure what is actually taught in the classroom.

v. Equity and fairness: the selected test should be free from bias, fairness, and cultural sensitivity, and is fair and equitable for learners with diverse needs.

vi. Technical standards: the test should be free from all the typographical errors, free from ambiguity and user friendly.

vii. Costs and feasibility: it should not be more expensive. It should be feasible to administer to all level of learners.

viii. Motivation: the test should motivate the students to respond easily. All the test items should be arranged according to the level of difficulty.

ix. Discriminating power: the test should discriminate the good and bad items accurately.

x. Practicability: It means easy to conduct and answer the test. Also it should be easy to score the responses of the learners (McDivitt, Jo Patricia. & Donna Gibson).

5.15 ROLE OF TEACHER EDUCATION PROGRAMMES IN IMPLEMENTING INCLUSIVE EDUCATION

Providing inclusive education to all students with specific needs within regular classes would be a major challenge for the teachers. Preparing teachers to accommodate the needs of the children with specific needs is a growing demand of teacher education programme at all levels. As Roach (1995) points out, successful planning models ensure that all teachers, professionals and related service personnel are included in the process. To prepare teachers to teach in inclusive settings, teacher education programme should incorporate inclusive practices in their teacher preparation programs. Pre service training program should acquaint teachers in

training with working with students with diverse needs. Student teachers could be given continuous education to identify and solve the complex emotional needs of students. The primary goals of all pre service and in service training of teachers include creating positive attitudes about working with students with diverse needs and allaying apprehensions and concerns the teachers might have about their competence to address the needs these students. The three training related activities are:

i. Opportunities to see good examples of inclusion,
ii. Provision of information about inclusion, student diversity, and inclusion related practices, together with the development of skills.
iii. Time to plan with team members.

The major components of any teacher education programme for preparing the teachers to teach the students with disabilities are Collaborative teaching, Inclusive teaching techniques and strategies and Collaborative Experiences.

Exposure to good Inclusive Classrooms

It is essential that teachers have opportunities to visit schools that demonstrate inclusive practices.

Information and skills needed

Teachers should have sufficient training in management techniques, instructional strategies and curriculum adaptations tactics.

Collaborative teaching

Prospective teachers could be given practice to adopt collaborative teaching approaches like cooperative learning techniques, co teaching, group investigation models, small group discussions and peer teaching to teach the students with specific needs.

Inclusive teaching techniques and strategies

Professional training in inclusive techniques and practices could be the part of teacher education curriculum. Pre service training programme should address

appropriate accommodations in curriculum, instructional activities and evaluation procedures based on inclusive education.

Collaborative Experiences.

The curriculum of Teacher education programme should provide field based experiences on inclusive education to the prospective teachers. It can be done through simulation and role-playing. Also prospective teachers should be given the opportunity to observe and work in collaborative, inclusive situations. Internship training could be arranged to observe and work in the inclusive classrooms, participate in all activities in the inclusive schools.

The teacher education programme should have the following practices for the successful implementation of inclusive education.

i. Teacher education programme should include inclusive education in their curriculum.

ii. Teacher education programme could give due importance for the Pedagogy and training in Inclusive Education to the regular teachers.

iii. The Teacher education programme at all levels should emphasize the study of disability as one of the main course subjects.

iv. The Principles of Inclusive Education should be emphasised in all training.

v. The teachers should be exposed to the concept of inclusive need based pedagogy through training.

vi. Teacher education programme should give pre-service training in various child-cantered pedagogy to impart education for all.

vii. Teacher education programme could reorient the existing pre service programme to meet the diverse needs of children with disabilities and the different models of service in special education at all levels.

viii. Student teachers at all levels could be given internship at least for a month in inclusive schools.

ix. Pre-service programmes at all levels should promote research and development activities in the field of special education.

x. Teacher education departments should have a mutual collaboration with the department of special education to promote education of children with disabilities.

xi. There should be separate training programmes for teacher educators in special education programmes.

xii. Pre service training programmes should be revamped to meet the challenges of changing trends in special education

xiii. Training could be given to the student teachers on how to handle various assistive technological devices in their teaching- learning process to satisfy the needs of diverse learners in the inclusive schools.

xiv. Assisting SSA State Mission Societies in conducting teacher training.

xv. Development of teacher training modules and monitoring the inclusive education programme by regular visits to schools.

5.12 INFRASTRUCTURAL SUPPORT IN EXECUTING INCLUSIVE EDUCATION.

It is very important to address issues related to infrastructural facilities in inclusive schools and ensure that all schools should make necessary modification by providing least restrictive environment. Schools should make some basic infrastructural changes for executing Inclusive Education. The following facilities could be made.

i. Separate entrance for physically challenged students.

ii. Barrier free school campus with magnified sign boards.

iii. Wide doors to the classrooms and rough floors.

iv. Wide Class rooms and semicircular seating arrangements with digital boards, audiovisual systems, display and writing boards.

v. Provision for ramps and railings.

vi.   Disability friendly hygienic toilets for girls and boys with hand bars.

vii.   Hand bars near drinking water areas.

viii.   Provision for Audio Visual rooms equipped with charts, slides, films, digital boards, audiovisual systems, the Internet, and educational CDs.

ix.   Well-resourced library with books, Braille books, talking textbooks, reading machines, audio and video texts periodicals, and a variety of other resources that can be kept in short racks and almiras for easy assessing.

x.   Provision for assistive devices for all categories of disabilities.

xi.   Provision for Art, craft, music and dance rooms to encourage students to develop a variety of interests.

xii.   Indoor Sports Area for Indoor Sports such as Table Tennis, Carrom, Chess and YOGA.

xiii.   The school buses with provision for wheel chairs and seat belts.

xiv.   Medical centre with qualified nursing staff and counselling cell with qualified counsellor.

xv.   Full fledged Canteen facility serving healthy and nutritive food to students.

xvi.   Providing facilities for physiotherapy, occupational therapy and speech therapy within the school setting.

xvii.   Resource Room for all children for learning and doing activities.

xviii.   Disabled students should have barrier-free access to all educational facilities and services in the school including hostels, laboratories and play ground.

xix.   Support services like sign language interpreters, transcription services and scribes may be provided.

xx.   Adequate and appropriate transport facilities with seat belts and provision for wheel chairs .

Self assessment questions

1. Write notes on school enrolment policy.
2. Write notes on visiting teacher service.
3. Explain the need and purpose of assessment in inclusive education and discuss the methods of assessment.
4. How will you select and use appropriate assessment instruments?
5. Discuss about the grants for assistive technology.
6. Explain the role of teacher education in implementing inclusive education.
7. Discuss about infrastructural support in executing inclusive education.

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REFERENCES

American Association on Mental Retardation (1983). Cited in Grossman, H.G. (Ed.1983) Classification in Mental Retardation Washington, DC:A

Anastasi, A. (1988). Psychological Testing. New York: MacMillan Publishing Company.

Advani, Lal and Anupriya Chada (2003). You and Your Special child, New Delhi: UBS Publishers. Cited in Mangal , S.K.(2012). *Educating Exceptional Children; An Introduction to Special Education*. New Delhi: PHI Learning Private Limited.

Allen Stacey, NVPIE, NEVADA Partnership for Inclusive Education retrieved from http://nvpie.org/inclusive.html.

Ahmad, Fouzia Khursheed (2015).Use of Assistive Technology in Inclusive Education. *Transcience* 6(2),65. Retrieved fromhttps://www2.hu-berlin.de/transcience/ l6(2).

Bank, J.A.(1998). The lives and values of researchers. Implications for educating citizens in multicultural society. Educational researcher,4-17.(9) cited in Mugambi, M. Mercy, 2017. Approaches to Inclusive Education and Implications for Curriculum Theory and Practice. *International Journal of Humanities Social Sciences and Education (IJHSSE)*, 4(10), 92-106. doi:http://dx.doi.org/10.20431/2349. Retrieved from https://www.arcjournals. org/pdfs/ijhsse/v4-i10/13.pdf

Bailey, J.1998.Inclusion through categorization. London: Routledge. Bender,W.N. (2008). *Learning disabilities: Characteristics, Identification and teaching strategies.* (6th Ed.). Boston; Pearson cited in Smith, E.C. Tom, Edward, A. Polloway, James, R. Patton, & Carol, A. Dowdy. (2011). *Teaching Students with Special Needs in Inclusive settings*. Upper Saddle River, New Jersey: Pearson education Inc.

British Mental Deficiency Act (1981) cited in Shanmugam, Abnormal Psychology, New Delhi. Tata Mc Graw – Hill

Brill, R.G., B. Mac Neil & L.R. Newman (1986). Frame work for Appropriate Programs for Deaf children, cited in D.P. Hallahan & J.M. Kauffman (1991). Exceptional children (5th edn.) Boston; Allyn & Bacon.
Page, J.D. (1976). Abnormal Psychology New Delhi; Tata Mc Graw-Hill.

Brooth ,T.(1998). *The poverty of inclusive education*. London: Routledge.

Brooth, T. & Ainscow, M. (2002). *The index for inclusion*.UK centre for studies on inclusion education. cited in Mugambi, M. Mercy, 2017. Approaches to Inclusive Education and Implications for Curriculum Theory and Practice. *International Journal of Humanities Social Sciences and Education (IJHSSE)*, 4(10), 92-106. doi: http://dx.doi.org/10.20431/2349. Retrieved from https://www.arcjournals.org/ pdfs/ijhsse/v4-i10/13.pdf

Chadha, Anupriya. 2001. *A Guide to Educating Children with Learning Disabilities.* New Delhi: Vikas Publishing.

Chatterjee, G. (2003). The global movement for inclusive education. Retrievedfrom http://www.indiatogether.org/2003/apr/edu-inclusive.htm Census of India (2011). Government of India. Retrieved from http://censusindia.gov.in/

Chavuta, A. (2008). Montfort Special Needs Education College and Leonard Cheshire Disability. International Inclusive Education Project.

Census of Government of India. (2011).*Disability in India A statistical profile.* Central Statistics office, Ministry of Statistics & Program Implementation, Government of India. http://censusindia.gov.in/

Cohen,I.G., & & Spenciner,I.J.,(2007). Assessment of children and youth with special needs. Boston: Allyn&Bacon.

Das, A. K., Kuyini A. B., & Desai I. P. (2013). Inclusive Education in India: Are the Teachers Prepared? International Journal of Special Education.28(1). http://www.internationaljournalofspecialeducation.com/articles.cfm?

Das, Ashima. Children with Disabilities in Private Inclusive Schools in Mumbai: Experiences and Challenges, *Asia Research Centre Working Paper*,34.

Debenham, Lucy .(2008). The Special Educational Needs and Disability Act. About Learning Disabilities. Retrieved from https://www.revolvy.com/main/ index. php?s=Special Educational Needs and Disability Act 2001

Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) American Psychiatric Association,(1994) Retrieved from http://www. assessmen t psychology.com/iqclassifications.htm

Disability Discrimination Act. (1995).retrieved fromhttp://www.ox. ac.uk/media/ global/wwwoxacuk/localsites/studentgateway/documents/disabilityadvisoryser vice/DDA_SENDA_factsheet.pdf

Dyson, A., Farrel.P., Polat & huchenson, G. (2004).Inclusion and pupils achievement.

University of research Report: Newcast. cited in Mugambi, M. Mercy, 2017. Approaches to Inclusive Education and Implications for Curriculum Theory and Practice. *International Journal of Humanities Social Sciences and Education (IJHSSE)*, 4(10), 92-106. doi: http://dx.doi.org/10.20431/2349. Retrieved from https://www.arcjournals. org/pdfs/ijhsse/v4-i10/13.pdf

Fisher,D., Frey,N., & &Thousand,J.(2003). What do special educators need to know and be prepared to do for inclusive schooling to work?. *Teacher Education and Special Education*, 26(1), 42-50

Forlin, C. (2004). Promoting inclusivity in Western Australian schools. *International Journal of Inclusive Education,* 8, 183-200.

Freiberg, K. (2005). Non traditional families and their architectural needs. *Human factors and Architectural research methods.*

Global Partnership for Education report(2013). Persons with disabilities retrieved fromhttp://www.right-to-education.org/issue-page/marginalised-groups/persons-disabilities

Giffard, Lindsay, K. (2007). Inclusive Education in India: Interpretation, Implementation and Issues. Sussex: The Consortium for Educational Access, Transitions and Equity Retrieved http://www.create-rpc.org/_pdf_documents_/PTA15.pdf

Goddard, M. (2004): Access through technology. *Library Journal*, 2, 2-6. Cited in Ahmad, Fouzia Khursheed (2015).Use of Assistive Technology in Inclusive Education. *Transcience* 6(2),65. Retrieved from https://www2.hu-berlin.de/transcience/

Haddad, Caroline(2009). Teaching Children with Disabilities in Inclusive Settings. Hallahan,D.P., Lloyd,J.W.,Kauffman, J.M.,Weiss,M.P., & Martinez,E.A. (2005). Learning disabilities: Fountations, charateristics and effective teaching. (3rd ed.). Boston: Allyn&Bacon

Hanley, M. S. (2005).The Scope of Multicultural Education. *New Horizons for Learning*. http://www.newhorizons.org/strategies/multicultural/hanley.

Hunt, Nancy & Marshall Kathleen (2002). Exceptional Children and Youth (3rd ed.) Boston: Houghton Mifflin Company.

Individuals with Disabilities Education Act (IDEA).(1990). Retrieved from https://www.specialeducationguide.com/disability-profiles/hearing-impairments/

Individuals with Disabilities Education Act (IDEA), 1994. *Principles of Special Education.* Retrieved from http://askresource.org/wp-content/uploads/2014/09/Six-Principles-of-IDEA.pdf

Individuals with Disabilities Education Act (IDEA)(2004). Washington DC.

Individuals with Disabilities Education Act (IDEA) Amendments, (1997). Retrieved From https://www.specialeducationguide.com/disability-profiles/specific-learning-disabilities/

Interview Report of UNESCO IBE Director, 1994. Retrieved from http://www.ibe.unesco.org/fileadmin/user_upload/Policy_Dialogue/48th_ICE/Press_Kit/Interview_Clementina_Eng13Nov.pdf

Jangira, N.K.(1997). Special Educational Needs of Children and Young Adults: An Unfinished Agenda. *Education and Children with Special Needs: From Segregation to Inclusion,* Ed. Seamus Hegarty, Mithu Alur, Thousand Oaks: Sage Publications Inc.

Jennifer (2012), Teaching in an Inclusion Classroom: The Roles of the Regular Education and Special Education Teacher.

Kaderavek, J.N., & Pakulski, I.A.(2002).Minimal hearing loss is not minimal. *Teaching Exceptional children*, 34, 14-18. Cited in Smith, E.C. Tom, Edward, A. Polloway, James, R. Patton, & Carol, A. Dowdy. (2011). *Teaching Students with Special Needs in Inclusive settings*. Upper Saddle River, New Jersey: Pearson education Inc.

Mangal,S.K.,(2012). *Educating Exceptional Children; An Introduction to Special Education*. New Delhi: PHI Learning Private Limited.

Mc Divitt, Jo Patricia. & Donna Gibson (n.y). Guidelines for Selecting Appropriate Tests retrieved from http://www.ceuonestop.com/attachments/File/Assessment/Guidelines_for_Selecting_Appropriate_Tests.pdf

McLoughlin, A. James and Netick, Anne, (1983).Defining Learning Disabilities: A New and Cooperative Direction. *Journal of Learning Disabilities,* retrieved from http://journals.sagepub.com/doi/abs/10.1177/002221948301600107?

McNamara, B.E. (2007). Learning Disabilities: Bridging the gap between research and classroom practice. Upper Saddle River, New Jersey: Pearson. Cited in Smith, E.C. Tom, Edward, A. Polloway, James, R. Patton, & Carol, A. Dowdy. (2011). *Teaching Students with Special Needs in Inclusive settings*. Upper Saddle River, New Jersey: Pearson education Inc.

MHRD (2005).Action Plan for Inclusive Education of Children and Youth with Disabilities. Available on http://www.education.nic.in

Miller, S.P. (2002). *Validated practices for teaching students with diverse needs*. Boston: Allyn&Bacon

Myreddi, Vijayalakshmi and Jayanthi Narayan. (1999). Preparation of special education teachers: present status and future trends. *Asia Pacific Disability Rehabilitation Journal*,10(1).

National Joint Committee on Learning Disabilities USA (2005). Responsiveness to Intervention and learning disabilities: A report prepared by National Joint Committee on Learning Disabilities. *Learning Disabilities Quarterly,28,249-260.*

National Policy for Person with disabilities (2006) retrieved from http://vikaspedia.in/social-welfare/differently-abled-welfare/national-policy-for-persons-with-disabilities-2006

NCERT (1998). Sixth All-India Educational Survey. New Delhi: National Council of Educational Research and Training. Retrieved from http://ncert.nic.in

NCERT (2006).Including Children and Youth with disabilities in Education, a Guide for Practitioners. Department of Education of Groups with Special Needs. New Delhi.

Overton, (2009).assessing the learners with special needs an applied approach. NJ: pearson cited in

Omori Pele (2012), Role of Teachers in an Inclusive Classroom retrieved from http://www.ehow.com/about_6803985_role-teachers-inclusive-classroom.html.

Panda, K.C. (2006). *Education of Expectional Children.* New Delhi: Vikas Publishing House Pvt.Ltd.

Persons with disabilities act (1995) retrieved from http://newsonair.nic.in/PWD_Act.pdf

Persons with disabilities act (1995) retrieved from http://web.worldbank.org/archive/website01291/WEB/IMAGES/CHAPTE 7.PDF

Persons with disabilities act (1995) retrieved from https://yourstory.com/2016/05/disabilities-act-simplified/

Petty, R. E. (2012): Technology Access in the Workplace and Higher Education for Persons with Visual Impairments: An Examination of Barriers and Discussion of Solutions. Independent Living Research Utilization at TIRR: Houston, Texas. Cited in Ahmad, Fouzia Khursheed (2015).Use of Assistive Technology in Inclusive Education. *Transcience* 6(2),65. Retrieved from https://www2.hu-berlin.de/transcience/ l6(2).

Plan International report (2013). Persons with disabilities retrieved from http://www.right-to-education.org/issue-page/marginalised-groups/persons-disabilities

Report of Universal Declaration of Human Rights,United Nations.1998. Retrieved from http://www.un.org/en/universal-declaration-human-rights/

Report of Dakar World Education Forum in 2000. Retrieved from http://www.natcomreport.com/ghana/livre/inclusive-education.pdf

Report of Sarva Shiksha Abhiyan Retrieved from http://vikaspedia.in/education/policies-and-schemes/responding-to-children-with-special-needs-a-manual-for-planning-and-implementation-of-inclusive-education -in-ssa

Report on Policies and Schemes of Central and State Governments for People with Disabilities retrieved from https://www.sightsaversindia.in/wp-content/uploads/2014/06/17581_Policies-and-Schemes-of-Central-and-State-Governments-for-People-with-Disabilities.pdf

Report on National Policy for Persons with Disabilities (2006) retrieved from http://vikaspedia.in/social-welfare/differently-abled-welfare/national-policy-for-persons-with-disabilities-2006

Rehabilitation Council of India Act. (1992). Retrieved from http://www.disabilityindia.co.in/Acts-in-Disability/The-RCI-Act.php

Rights of Persons with Disabilities (2016) retrieved from http://www.disabilityaffairs.gov.in/upload/uploadfiles/files/RPWD%20ACT%202016.pdf

Rights of Persons with Disability, UNESCO. (2006). retrieved from http://www.ohchr.org/EN/HRBodies/CRPD/Pages/Convention_Rights_Persons with Disabilities.aspx

Roach,V. (1995). Supporting Inclusion: Beyond the rhetoric. Phi Delta Kappan,77, 295-299.

Rouse Martyn (2008), Developing Inclusive Practice: A Role for Teachers and Teacher Education published in the University of Aberdeen.

Sajid, Imran Ahmad. (2009). Inclusive Education and Social Work Practice. Retrieved from https://www.academia.edu/6808615/Inclusive_Education_and_Social_Work_Practice_in_Pakistan

Sanjeev.K. (2006).Inclusive Education: A Hope for Children with Special Needs. Retrieved http//www.bihartimes.com.

Sarao, Teena (2003). Obstacles and Challenges in Inclusive Education in Indiawith Special Reference to Teacher Preparation. Retrieved International Journal of Education and applied research 35 retrieved from www.ijear.org

Sarva Shiksha Abhiyan. *Sarva Shiksha Abhiyan: a programme for the universalization of inclusive education.* Ministry of Human Resource Development, Department of School Education & Literacy. Government of India. 2007. Retrieved from http://ssa.nic.in/.

Save the Children (2006). Inclusive Education: A Policy Statement. Source: http://www.eenet.org.uk/key_issues/policy/SC%20UK%20IE%20policy%20English.pdf Retrieved on 25th March 2015.

Schalock et.al. (2010). Intellectual disability: Definition, Classification and system of supports; Washington, Dc: American Association on Intellectual & Developmental Disabilities cited in Smith E.C. Tom.

Shah, R., Das, A. K., Desai, I. P. and Tiwari, A. (2014). Teachers concerns about inclusive education in Ahmadabad, India. *Journal of Research in Special Educational Needs*.doi: 10.1111/ 1471-3802.12054

SENDA (2011). Brief guidelines for lecturers and teachers. Edinburgh: Heriot-Watt University. Retrieved from https://www.kent.ac.uk/teaching/qa/guidance/senda.html Sleeter, C. E., & Grant, C. A. (2003). *Making choices for multicultural education: Five approaches to race, class, and gender.* Englewood Cliffs, NJ: Prentice Hall.

Smith, E.C. Tom, Edward, A. Polloway, James, R. Patton, & Carol, A. Dowdy. (2011). *Teaching Students with Special Needs in Inclusive settings*. Upper Saddle River, New Jersey: Pearson education Inc.

Sturmey, P., Sevin, J. A., & Matson, J. L. (1994). *Defining and assessing autism. Autism in children and adults: Etiology, assessment, and intervention.* Belmont, CA US: Thomson Brooks/Cole Publishing Co. Cited in Thorson,

Ryan Thomas, "Comorbid psychopathology in children with Autism Spectrum Disorders - cut-off scores for the Autism Specturm Disorders-comorbidity for children (ASD-CC)" (2011). LSU Doctoral Dissertations. 3526.   Retrieved from http://digitalcommons.lsu.edu/gradschool_dissertations/3526.

The Salamanca Statement and Framework for Action on Special Needs Education(1994). Retrieved fromhttp://www.right-to-education.org/resource /salamanca-statement-and-framework-action-special-needs-education

The World Health Organisation and the World Bank (2011). World report on disability retrieved from http://www.who.int/disabilities/world_report/2011/en/

Tver,D.F. & B.M. Tver (1991). Encyclopeadia of Mental and Physical Handicaps, Austin, TX: Pro-Ed. Cited in Mangal,S.K.,(2012). *Educating Exceptional Children; An Introduction to Special Education*. New Delhi: PHI Learning Private Limited.

UNESCO, Bangkok,Published by the UNESCO Asia and Pacific Regional Bureau for Education. Retrieved from http://voices.yahoo.com/teaching-inclusion-classroom-roles-the-6371586.html?cat=4

UNESCO (1994).Salamanca Statement.Retrieved January 17, 2016 from United Nations Educational, Scientific, Cultural Organization. http://portal.unesco.org /education/en/ev.phpURL_ID=10379&URL_DO=DO_TOPIC&URL_SECTIO N=201.html

UNESCO (2000).Dakar Framework for Action. http://www.unesco.org/education/efa/ed_for_all/dakfram_eng.shtml

UNESCO(2006).Inclusive Education. Retrieved from http://portal.unesco.org/education/en/ev.php-URI_ID

UNESCO. (2007). A human Right Based approach to education for all. Framework for the realization of Children's rights to education and rights within education. New York: UNESCO.

UNESCO, *School violence and bullying: Global status report*, (2016). Retrieved from http://unesdoc.unesco.org/images/0024/002469/246970e.pdf

UNICEF's Report on the Status of Disability in India. (2000). Retrieved from https://www.unicef.org/rosa/InclusiveInd.pdf

UNICEF (2007). Promoting the Rights of Children with Disabilities. Innocenti Research Centre. Retrieved from http://www.unicef-irc.org/publications /pdf/digest13-disability.pdf on 5th December 2015.

UNICEF's report *The state of the world's children 2013: Children with disability*

(2013). Retrieved from http://www.right-to-education.org/issue-page/marginalised-groups/persons-disabilities

Uppal, Jagmohan and Harinder Dey (2001).Inclusive education essential Aids and Appliances for Children with Disabilities Employment News. Dec. 3. cited in Mangal, S.K.(2012). *Educating Exceptional Children; An Introduction to Special Education*. New Delhi: PHI Learning Private Limited.

Volkmar, F. R., Klin, A., Siegel, B., & Szatmari, P. (1994). Field trial for autistic disorder in DSM-IV. *American Journal of Psychiatry*, 151(9), 1361-1367 cited in Thorson, Ryan Thomas, (2011). Co morbid psychopathology in children with Autism Spectrum Disorders - cut-off scores for the Autism Spectrum Disorders-co morbidity for children (ASD-CC). *LSU Doctoral Dissertations*. Retrieved from http:// digitalcommons.lsu.edu/gradschool_dissertations/3526.

Webber, J. & Scheuermann, B.(2008). Educating students with Autism: A quick start manual Austin, Tx: Pro ED.

Webster Merriam retrieved from https://www.merriam-webster.com/dictionary/ autism

Westling, et al. (2006) describe a teacher support programme designed to provide the necessary assistance for teachers involved in delivering services in inclusive settings.

Wing, L.(1996). The autistic Spectrum: A guide for parents and Professionals London; Constable.

WHO (2009): Assistive devices/technologies, retrieved from http://www.who.int/disabilities/technology/en/