BLOCK 3

Curriculum Accommodations and Adaptations

Advanced Certificate Course in Inclusive Education
(Cross Disability)

Rehabilitation Council of India
भारतीय पुनर्वास परिषद

REHABILITATION COUNCIL OF INDIA (RCI, GOVT. OF INDIA)
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CREDITS PAGE

PROGRAMME:
Advanced Certificate in Inclusive Education (Cross Disability)

Block III: CURRICULUM ACCOMMODATIONS & ADAPTATIONS

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Goals of education are same for all children provided that these goals are balanced and brought in harmony with the individual needs of each child. To make inclusive education possible and to better accommodate students with different learning abilities, the present education system, structure and practices need to become more flexible, inclusive and more collaborative. In India, the concept of inclusive education has not yet been linked to a broader discussion of pedagogy and quality of education. Any broad reform in education cannot be implemented without taking the inclusion of learners with special needs into consideration. However, there are many educators all over the country who do make small adaptations (accommodations and modifications) in their teaching in accordance with the principles of inclusive education. The strategies used by them are: group learning, peer tutoring, speaking slowly and clearly, looking at the hearing impaired child while speaking so that they can speech read, writing on the blackboard, etc. Most educators are aware of such techniques for classroom management of learners with special needs.

Block 3 is all about strategies and learning activities to facilitate curriculum differentiation. Differentiated curriculum is a way of thinking. It is a way of thinking about our students. It is a way of thinking about what our students really need to learn in school. It is a way of thinking about how we as special educators teach students and how they learn. It is a way of providing instruction that meets the needs, abilities and interests of our students. It is a way of thinking how each of our students is going to successfully learn the skills and concepts we want them to learn. It is a way of thinking about what our students like, what they are curious about, and what motivates them to be self-starters in the learning process. It is thinking about teaching and learning in new and different ways. There is no beginning or end. It is a process, and as such it continually develops. Therefore, there is no one correct way to do it. There is no readymade recipe, and ingredient that will work all the time. What there is, however, is a philosophy about students, teaching and learning. Supporting this are effective teaching and learning strategies that contribute to curriculum differentiation.

The focus of this Block is to embrace the philosophy of curriculum differentiation, methodologies of teaching school subjects, and multi-level instruction. This block is divided into five units; each unit introduces different suggestions, strategies and activities to understand curriculum transaction. The five units of this material are:

1. *Understanding Curriculum*
2. *Classroom Transactions*
3. *Adaptations in Co-curricular Activities*
4. *Teaching Practices: Elementary & Secondary Level*
5. *Alternative Methods of Evaluation*

This material is developed to facilitate and support inclusive education. It is meant to help us become better at teaching all students together regardless of their abilities, disabilities or background of experiences. The suggestions, strategies, and learning activities are here for you to choose what you might like to try in your classroom.

Block III: CURRICULUM ACCOMMODATION AND ADAPTATIONS

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Unit 1: Understanding Curriculum

1.1 Objectives

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

- understand mainstream curriculum
- understand about the National Curriculum Framework and its role in Inclusion
- understand the concept of Curriculum Adaptation Accommodation and Modification
- know the different types of adaptations and make individual adaptation plans in an inclusive set up
- learn about disability specific accommodations and adaptations

1.2 Introduction

"Education is the most powerful weapon which you can use to change the world".
-- *Nelson Mandela, 1918-2013, South African President, philanthropist*

The 86th Constitutional amendment making education a fundamental right was passed by Parliament in 2002. The Right of Children to Free and Compulsory Education Act, a law to enable the implementation of the fundamental right, was passed by Parliament. This right is for all children. Inclusion has been defined as "the acceptance of all pupils within the mainstream education system, taught within a common framework, and identified as the responsibility of all teachers" (Thomas, 1997*)*. "Inclusive education means education of all students, where all students are equal participants in the learning process. Provision of inclusive education involving students with disabilities is based on the belief that those with disabilities ***SHOULD NOT HAVE TO DEPEND*** on specialised services alone, to benefit from educational resources, activities and practices that are otherwise available top all. Inclusivity is maintained when **ALL MEMBERS** of a group are able to participate in its activities, which means, provisions made are considerate of all members and not just those from specific groups or, with special abilities, disabilities, and/or needs." (NCERT)

As education is the process of facilitating learning or the acquisition of knowledge, skills, values, beliefs and habits, it is therefore important to note that the curriculum in an educational institution plays a major role in education. The aim of a curriculum is to ensure that all

children are provided with learning opportunities that recognize and celebrate their uniqueness, develop their full potential.

1.3 Introduction to Mainstream Curriculum

A curriculum includes the academic subjects and the sum total of experiences that a pupil receives through a variety of activities in the school, in the classroom, library, laboratory, play grounds, in informal contact between teachers and pupils. The curriculum as defined by Prof. William Davis is 'a systematic organization of instructional content and related activities designed to provide students with a sequence of meaningful learning experiences.' A curriculum, like many other factors, has a significant role in the progress of Education. It is the heart of any learning institution. It is important to realize that teachers play a crucial role in creating an inclusive culture within a classroom as they have control over pedagogy, which involves the content and how that content is delivered.

Points to remember….

- ***A curriculum is always pre-planned.***
- ***A curriculum is meant for education in a particular society and children of a particular age group.***
- ***The goals of a curriculum are reflected in the set of educational objectives that are mentioned in it.***
- ***A curriculum facilitates planning of instruction by a teacher.***

According to Allan Grathon (2000), as cited by Bilbao *et al.* (2008), there are seven types of curriculum:

1. ***Recommended Curriculum:*** The Ministry of Education, the Commission on Higher Education, or any professional organization can recommend and implement a curriculum. In some cases, a law making can recommend a subject, a course, or any academic program which is deemed necessary for national identity and security, for environmental protection and sustainable development, among others.
2. ***Written Curriculum:*** This refers to a lesson plan or syllabus written by teachers.
3. ***Taught Curriculum:*** This is about the implementation of the written curriculum. Whatever is being taught or an activity being done in the classroom is a taught curriculum.
4. ***Supported Curriculum:*** Instructional materials, such as textbooks, audio visual materials, real life objects and outdoor visits and others are examples of support curriculum. It is called supported curriculum because it helps teachers implement a written curriculum thus enables the students to become life-long learners.
5. ***Assessed Curriculum:*** When students take a quiz or the mid-term and final exams, these series of evaluations are the so-called assessed curriculum.
6. ***Learned Curriculum:*** This type of curriculum indicates what the students have actually learned.
7. ***Hidden Curriculum:*** This refers to the unplanned or unintended curriculum but plays an important role in learning. It refers to the unplanned, unwritten, values, rules, behaviour, perspectives, unspoken or implicit academic, social, and cultural messages that are communicated to students while they are in school.

It is also important to understand the concepts like Curricular Activities and Extracurricular activities*:* Co-curricular refers to activities, programs, and learning

experiences that complement, in some way, what students are learning in school—i.e., experiences that are connected to or mirror the academic curriculum. Co-curricular activities are typically, but not always, defined by their separation from academic courses. Whereas Extracurricular (ECA) or Extra Academic Activity (EAA) are those that fall outside the realm of the normal curriculum of school or university education, performed by students. And generally, volunteer activities aren't always extracurricular activities.

1.3.1 Is there a difference between curriculum and syllabus?

When it comes to education, the two concepts which comes to our mind which are commonly misunderstood are syllabus and curriculum. **Syllabus** implies the subjects as well as the topics covered in the course of study. On the other hand, **curriculum** implies the chapters and academic content taught in school or college. It alludes to the knowledge, skills and competencies students should learn during study. A syllabus is considered as a guide to the in charge as well as to the students. It helps the students to know about the subject in detail, why it is a part of their course of study, what are the expectations from students, consequences of failure, etc. It contains general rules, policies, instructions, topics covered, assignments, projects, test dates, and so on.

Table # 1: Difference between Curriculum and Syllabus

Basis of Comparison	**Curriculum**	**Syllabus**
Meaning	Curriculum is the overall content, taught in an educational system or a course.	Syllabus is the document that contains all the portion of the concepts covered in a subject.
Origin	Curriculum is a Latin term.	Syllabus is a Greek term.
Set for	A course.	A subject.
Nature	Prescriptive	Descriptive
Scope	Wide	Narrow
Set out by	Government or the administration of school, college or institute.	Exam board
Term used	Till the course lasts.	For a fixed term, normally a year.
Uniformity	Same for all teachers	Varies from teacher to teacher

1.3.2 Education in India

Education in India is very dependent on the syllabus offered and most parents choose schools based on the syllabus it offers rather than on the kind of education imparted by the school. Students have to learn a common curriculum largely (except for regional changes in mother tongue) till the end of high school. The National Council of Educational Research and Training (NCERT) is the apex body for school education in India. The NCERT provides support and technical assistance to a number of schools in India and oversees many aspects of enforcement of education policies. In India, elementary education is from Class 1 to Class 8. Primary/secondary education in India is segregated as Primary (1st standard to 4th standard), Upper Primary (5th standard to 7th standard), Lower Secondary (8th standard to 10th standard), and Higher Secondary (11th and 12th standard).

In most schools children in Classes 1 to 3 are taught English, Hindi or their mother tongue/regional language (as a Second language), Mathematics, Environmental Science, and General Knowledge. In class 4 and 5, the environmental science subject is replaced by

Science and Social Studies. However some schools may introduce this concept in Class 3 itself. Some schools may also introduce a third language in Class 5th or even in Class 4th. Health Education and Computer (Basics) are also introduced at the primary level.

Schools in India offer both Indian and International syllabi some of which are:

A] National Boards: CBSE - Central Board of Secondary Education. Started by the NCERT (National Council of Educational Research and Training). ICSE- Indian Certificate of Secondary Education. An offshoot of the Cambridge IGCSE and is now governed by the 'Council for the Indian School Certificate Examinations'.

B] State Board: Each state in the country has its own Department of Education that runs its own school system with its own textbooks and evaluation system. The curriculum, pedagogy and evaluation method are largely decided by the SCERT in the state, following the national guidelines prescribed by the NCERT.

C] National Open School*:* The National Institute of Open Schooling is the board of education under the Union Government of India. The NIOS is a national board that administers examinations to increase literacy and provide education to rural areas. It also offers vocational courses after high school. It provides both distance education and an alternative to boards like the ICSE and the CBSE.

The NIOS conducts five categories of examinations, twice a year:

(i) Open Basic Education (OBE) (A level, B level, C level equivalent to Class III, V, VIII respectively of formal Education) courses are offered through Accredited Agencies (AAs)
(ii) Secondary – leading to Secondary School Certificate
(iii) Sr. Secondary – leading to Senior Secondary School Certificate
(iv) Open Vocational Education
(v) Life Enrichment Programmes

Candidates can opt for more than one examination benefit from the clauses below:

(i) ***Extra time:*** Additional time of 20 minutes per hour of examination for each of the subject is to be given to cover time required for reading over by the scribe, understanding the question, dictation, fatigue on account of sitting continuously etc. If the medical condition requires short breaks for better performance, a break of not more than 10 minutes per hour will be permitted.

(ii) ***Scribes***: Candidate with following certified impairments are provided with this facility. When applying for the scribe facility, the candidate should specify the language the scribe should be comfortable using.

(iii) ***Additional Help*****:** Depending on the nature of the examination, lab assistant or reader may also be appointed to assist the candidate during the examination.

(iv) ***Non-professional support personnel*****:** At times, caregivers may be required to help the candidate into the examination hall and find their seat while other cases may require a caregiver to remain with the candidate for motivation and comfort.

(v) ***Use of computers:*** Candidates with the impairments (Learning disability, Cerebral palsy, Autism) can use computers in the examination after a written request is made to the concerned Regional Director:

(vi) ***Special Provisions for specific impairments:***

Candidates with blindness and low vision: (a) These candidates are provided with alternate questions in the theory papers in place of the question related to marking and labelling of maps, construction of geometrical figures and diagrams/graphs etc. at secondary and senior secondary level. (b) Besides scribes and use of computers, these candidates may take examinations by using braille typewriters, which they have to bring on their own.

Candidates who are deaf/with hearing impairment: Sign language interpreters be allowed in the examination room.

Candidates with Autism, Cerebral Palsy, Intellectual Disability (Mental Retardation), Multiple Disabilities: (a) Computers with adapted hardware like trackball instead of mouse, augmentative communication boards (illustrative and not exhaustive) may be allowed. (b) Candidates with intellectual impairments may opt for project work.

D] International Boards: Cambridge University Programs. Currently focused on IGCSE at 9 &10 and A Level at 12 Grade. IBO Programs (International Baccalaureate).

1.4 Understanding NCF from Inclusive Perspective

The National Policy on Education (NPE, 1986) proposed the National Curriculum Framework as a means of evolving a national system of education. The National Curriculum Framework (NCF 2005) is one of the four National Curriculum Frameworks published in 1975, 1988, 2000 and 2005 by the National Council of Educational Research and Training NCERT in India. It underscores the significance of making curriculum "***an inclusive and meaningful experience for children***" stating "this requires a fundamental change in how we think of learners and the process of learning". NPE 1986, assigned a special role to NCERT in preparing and promoting NCF.

Yash Pal Committee Report (1993), 'Learning without Burden' observed that learning has become a source of burden and stress on children and their parents. The process of development of NCF was initiated in November, 2004 by setting up various structures like National Steering Committee Chaired by Prof. Yash Pal and twenty-one National Focus Groups on themes of curricular areas, systemic reforms and national concerns. The NCF was approved by Central Advisory Board on Education in September, 2005.

Need for NCF:
a) The school system is characterized by an inflexibility that makes it resistant to change;
(b) Learning has become an isolated activity, which does not encourage children to link knowledge with their lives in any organic or vital way;
(c) Schools promote a regime of thought that discourages creative thinking and insights;
(d) What is presented and transmitted in the name of learning in schools bypasses vital dimensions of the human capacity to create new knowledge;
(e) The "future" of the child has taken center stage to the near exclusion of the child's" present", which is detrimental to the well-being of the child as well as the society and the nation.

1.4.1 Main Features of the NCF 2005

A] ***Perspective****:* To uphold values enshrined in the Constitution of India, reduce of curriculum load, ensure quality education for all and initiate certain systemic changes. NCF proposes five guiding principles for curriculum development:

a) Connecting knowledge to life outside the School
b) Ensuring that learning is shifted away from rote methods
c) Enriching curriculum so that it goes beyond Text Book
d) Making Examination more flexible and non-threatening
e) Nurturing an overriding identity informed by caring concerns within the democratic polity of the country

NCF 2005 emphasizes the need of inclusive curriculum keeping in view the diversity of learners*.*

B] Learning and Knowledge*:* Learning should be a child centred approach. The curriculum structure should be designed in a way that students enjoy learning. It should focus on the holistic development of each student. Inclusive education to be given priority and the curriculum must be flexible enough to suit the needs of every student irrespective of gender, class, religion or disability. The value of interaction with peers and teachers is also highly emphasized. Constructive learning has to be part of the curriculum. Children must be viewed as active learners and should be part of the construction of knowledge in their learning process, where their voices must be heard. They should be able to relate learning to their immediate environment and not merely to the text books, be provided with challenging activities where they should be encouraged to be creative and active participants.

C] Curricular Areas, School Stages and Assessment*:* Significant changes are recommended in language, mathematics, science and social sciences, to make education more relevant and to reduce stress. Attention is also drawn towards other curricular areas: work, the arts and heritage crafts, health and physical education, and peace.

1] Language:

a) Makes renewed attempt to implement 3-language formula
b) Emphasis on home language as medium of instruction
c) Curriculum should promote multi-lingual proficiency; can happen only if learning builds a sound language pedagogy of the mother tongue.
d) Focus on language as an integral part of every subject: reading, writing, listening and speaking contribute to child's progress in all curricular areas and must be the basis for curriculum planning.

2] Mathematics: Teaching of Mathematics to focus on child's resources to think and reason, to visualize abstractions and to solve problems.

NCF also draws attention on four other areas:
a***. Art Education***: covers music, dance, visual arts and theatre which on interactive approaches not instruction aesthetic awareness and enable children to express themselves in different forms.
b. ***Health and Physical Education:*** Health depends upon nutrition and planned physical activities.

c. ***Education for Peace***: As a precondition to snub growing violence and intolerance
f. ***Work and Education:*** As it can create a social temper and agencies offering work opportunities outside the school should be formally recognized.

D] School and Classroom Environment: A policy of inclusion needs to be implemented in all schools and throughout our education system. Physical environment has to be accessible, safe and favorable to students. Schools should treat all students with equality, respect, dignity, provide equal opportunities for participation without any bias, realize the rights of the students and provide a flexible curriculum that is accessible to all the students. Teaching and learning processes in the classroom should be planned in a way that they meet the specific needs of each individual student. A teacher's role is critical in providing education to all children. Collaboration with fellow teachers or other organizations can help achieve this.

E] Systemic Reforms*:* NCF aims at bringing about reforms in the education system: curriculum that is learner centric, flexible; changes and modifications in the examination system; teacher plays a role of a facilitator.

NCF focuses on child as an active learner:

a) Primacy to children's experience, their voices and participation.
b) Needs for adults to change their perception of children as passive receiver of knowledge.
c) Children can be active participants in the construction of knowledge and every child come to with pre-knowledge.
d) Children must be encouraged to relate the learning to their immediate environment.
e) Emphasizes that gender, class, creed should not be constraints for the child.
f) Highlights the value of Integration.
g) Designing more challenging activities

Guiding Principles under NCF:

a) Connecting knowledge to life outside the School
b) Ensuring that learning is shifted away from rote methods
c) Enriching curriculum so that it goes beyond Text Book
d) Making Examination more flexible and non-threatening
e) Discuss the aims of education
f) Building commitment to democratic values of equality, justice, secularism and freedom.

NCF 2005, highlights the following aspects:

a) The value of Interaction with environment, peers and older people to enhance learning.
b) That learning task must be designed to enable children to seek knowledge other than text books.
c) The need to move away from "***Herbartian***" lesson plan to prepare plans and activities that challenge children to think and try out what they are learning.

1.5 Accommodation, Adaptations and Modification

Adaptations, accommodations, and modifications may seem like interchangeable terms, but when it comes to inclusion they carry significantly different meanings.

Accommodations	Modifications
Adaptations that do not fundamentally alter all the work standards or lower expectations in either the instructional or assessment phases of a course of study and can be designated as "accommodations"	Adaptations that alter or lower standards or lower expectation and can be termed "modifications". These modifications, although providing access, will necessitate careful selection of assessment components to achieve accountability of performance

According to (NCERT 2015)

a) Adaptation refers to adjusting assessments, material, curriculum, or classroom environment to accommodate a student's needs so he/she can participate in, and achieve the teaching-learning goals.
b) Modification involves making changes to learning goals, teaching processes, assignments and/or assessments to accommodate a student's learning needs.

Accommodations in the form of adaptations occur when teachers differentiate instruction, assessment and materials in order to create a flexible learning environment. For example, a student could be working on below grade level learning outcomes in Language Arts and at grade level in all other subjects or courses, some of which require reading materials at the lower reading level.

Adaptations include, but are not confined to:

a) audio tapes, electronic texts, or a peer helper to assist with assigned readings
b) access to a computer for written assignments (e.g. use of word prediction software, spell-checker, idea generator)
c) alternatives to written assignments to demonstrate knowledge and understanding
d) advance organizers/graphic organizers to assist with following classroom presentations
e) extended time to complete assignments or tests
f) support to develop and practice study skills; for example, in a learning assistance block
g) use of computer software which provides text to speech/speech to text capabilities
h) pre-teaching key vocabulary or concepts; multiple exposure to materials
i) working on provincial learning outcomes from a lower grade level

Accommodations in the form of modifications are instructional and assessment-related decisions made to accommodate a student's educational needs that consist of individualized learning goals and outcomes which are different than learning outcomes of a course or subject.

Modifications should be considered for those students whose special needs are such that they are unable to access the curriculum (i.e., students with limited awareness of their surroundings, students with fragile mental/physical health, students medically and cognitively/multiply challenged.) Using the strategy of modifications for students not identified as special needs should be a rare practice. In many cases, modifications need only form part of an educational program for a student with special needs, and they need not be a permanent or long term solution. Whether to use modifications should be reviewed on a regular basis. Decisions about modifications should be subject or course specific wherever possible. *For example, a student with an intellectual disability may require modifications to a specific subject area such as mathematics; however, modifications may not be required to meet the provincial outcomes in physical education.*

What is Curriculum Adaptation?

As a special education teacher you will be required to adapt the curriculum and make necessary modifications to increase the student's chances of success. In the last part we discussed the various techniques that can be used to adapt and modify curriculum for children with special needs. In this part we will discuss specific disabilities and the adaptation and modifications you can use for each area. The chances are that if you are working in a regular school district you will come into contact with high incidence disabilities. These may include:

a) Hearing Impairment
b) Learning Disabilities
c) Mental Retardation
d) Emotional Disabilities
e) Attention Deficit/Hyperactive Disorder or
f) Any other special needs children

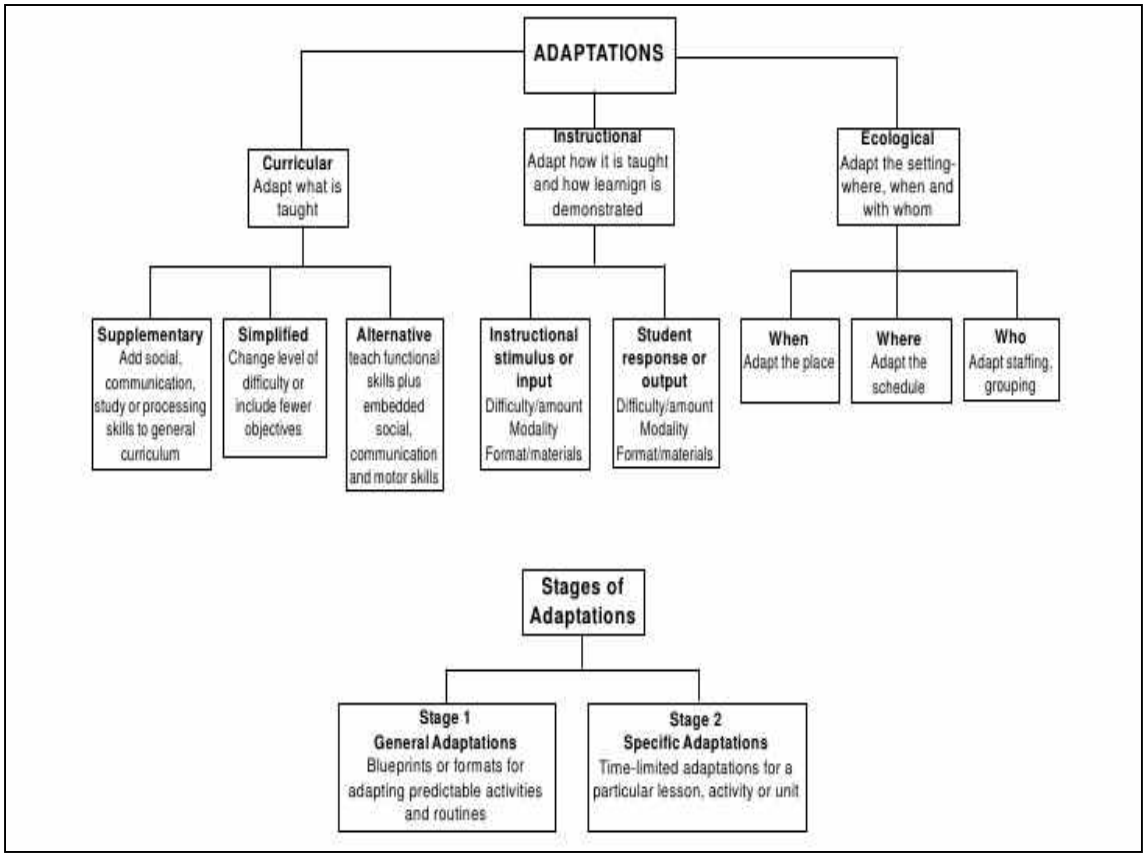
Curriculum Adaptation is an ongoing process that changes the regular prescribed curriculum by modifying or adapting it in terms of the content or delivery of instruction to meet the learning requirements of students with learning difficulties including children with disabilities. The content, the teaching process, assessment and evaluation, and the physical environment may be modified or adapted and activities should be flexible in order that the students benefit and achieve success in the classroom. Teachers ought to adapt the curriculum to provide equity and meet the needs of diverse learners in order that all learners benefit and can fully participate in the classroom activities. Curriculum Adaptations are not intended to lower the educational standards. Curriculum is adapted to make education first and foremost accessible and secondly to see that no learner is unfairly prejudiced and excluded.

Adjustments or modifications can be made in:

- ✓ Teaching and learning environment
- ✓ Teaching and learning strategies
- ✓ Teaching and learning support materials that enhances a learners performance and allows at least partial participation in a learning activity
- ✓ Level of support
- ✓ Assessment

For any adaptation to be effective it must FLOW:

1. ***F**it into the classroom environment*
2. ***L**end themselves in meeting individual student needs*
3. ***O**ptimize understanding for each student*
4. ***W**ork well with activities planned for the lesson.*



From: Janney, R., Ph.D., and Snell, M., Ph.D. (2000) Modifying Schoolwork; Baltimore, MD; Paul H. Brooks Publishing Company

Example: In case of CwLD the adjustments in the type, difficulty, amount and sequence of materials
1. Give shorter but more frequent assignments.
2. Shorten the length of the assignments to insure a sense of success.
3. Copy chapters of textbooks so that the child can use a highlighter pen to underline important facts.
4. Make sure that the child's desk is free from all unnecessary materials.
5. Correct the student's work as soon as possible to allow for immediate gratification and feedback.
6. Allow the student several alternatives in both obtaining and reporting information--tapes, interviews and so on.
7. Break assignments down to smaller units. Allow the child to do 5 problems at time, or 5 sentences, so that they can feel success, receive immediate feedback if they are doing the assignment incorrectly and direct their energy to more manageable tasks.
8. Hold frequent, even if short conferences with the child to allow for questions, sources of confusion, sense of connection and avoidance of isolation which often occurs if the work is too difficult.

Why is Curriculum Adaptation necessary?

a) Curriculum adaptation is a form of reasonable accommodation as mandated by the UNCRPD 2006, which facilitates the teaching-learning process when there are students with learning difficulties in the mainstream classroom.
b) Curriculum adaptations are made to simplify and reduce the content so that learners with difficulties can absorb the most critical part of the curriculum.
c) Adaptation of the curriculum ensures that all learners get access to quality and meaningful learning experiences.
d) Children with learning difficulties do not feel excluded when it comes to understanding the subject matter.

Guidelines for Curriculum Adaptation:

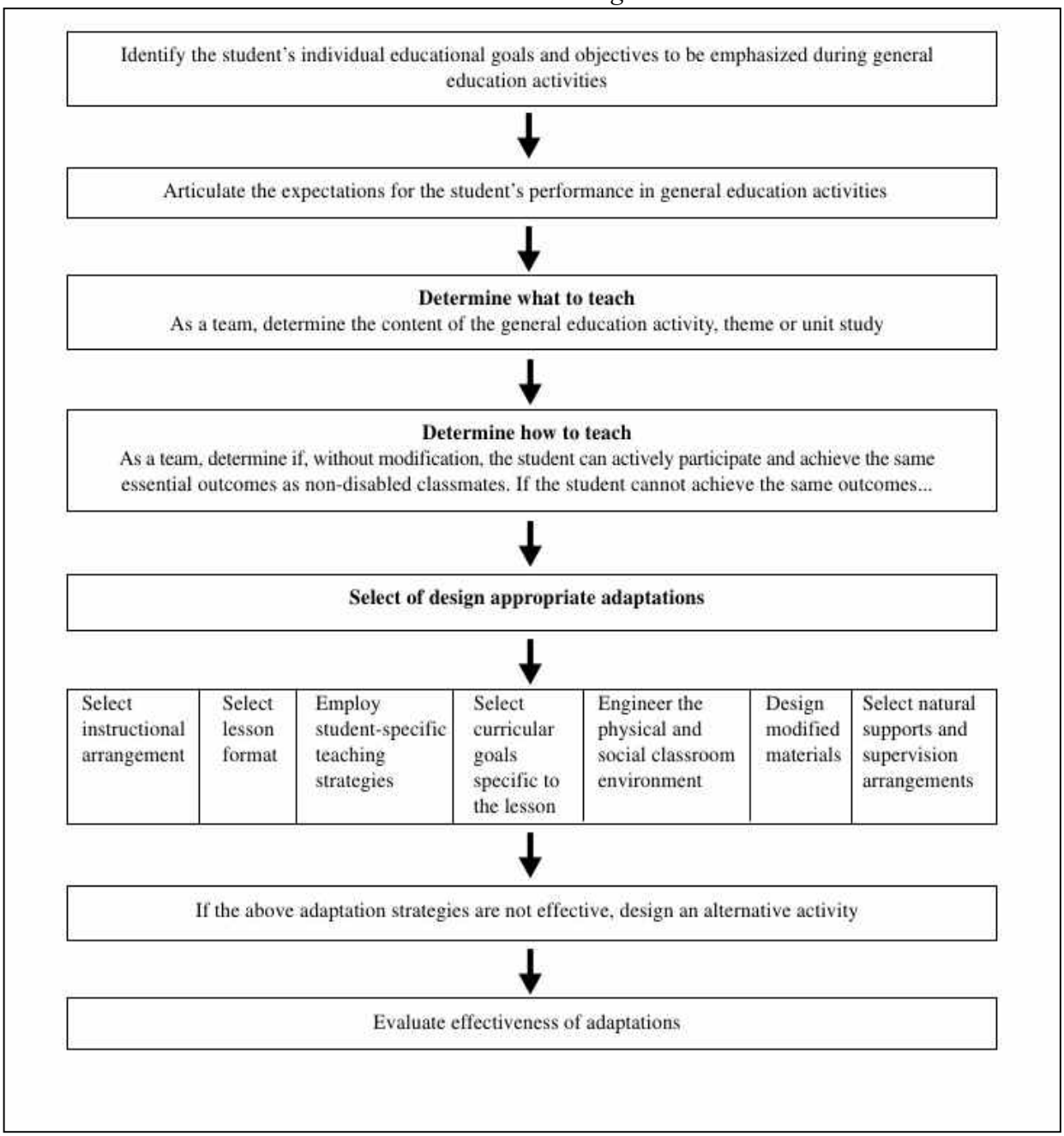
The following principles should be considered for adapting the curriculum:

a) The adaptation should not change the original concept of the curriculum used because the objectives of adaptation is to provide some learning experiences to all learners.
b) For providing same experiences, compensatory activities should be planned in such a way that the child gets a holistic picture of the concepts taught in the regular classes. The objective of the instructional material should remain same for all learners.
c) Modification in the instructional material should aim to facilitate maximum participation of children with learning difficulties in such a way that it also motivates all learners in the classroom.

If the child is primarily an ***auditory learner***, offer adjustments in the mode of presentation by use of the following techniques:

1. Give verbal as well as written directions to assignments.
2. Place assignment directions on tape so that students can replay them when they need.
3. Give students oral rather than written tests.
4. Have students drill on important information using tape recorder, reciting information into the recorder and playing it back.
5. Have students drill aloud to themselves or to other students.
6. Have children close their eyes to try and hear words or information.

A Curricular Decision Making Flowchart



1.6 Individual Accommodation and Adaptations Plans

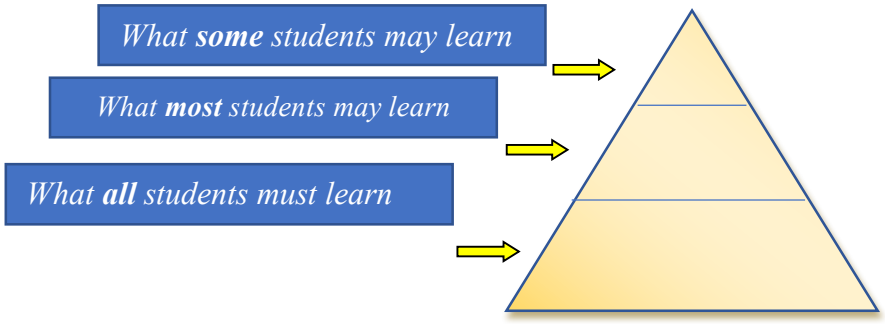
Nine types of curriculum adaptations will be discussed in this unit. The following need to be kept in mind before any adaptations are made.

a) Co relate adaptations to Individual Educational Plans/ Individual Training Plans.
b) Do not adapt just for the sake of adaptation, but adapt to meet the student's need
c) A child with a learning difficulty may not require adaptations in all the nine areas. The teacher should determine the best and the most appropriate methods to address students' needs.
d) The teacher is not expected to make different programs for students; but managed the differences using a variety of approaches.

e) The teacher should find ways to meet the learning needs within the unit or lesson being taught.

Let us understand the nine types of adaptations:

- Input- Provide multiple experiences with materials for different learning styles (visual, auditory and kinaesthetic learners)
- Output- Flexibility in assessing and evaluating learning outcome by providing alternatives to written assignments/ tests.



- Size of the content- The content may be reduced the most critical potions and some parts may be omitted to ensure maximum learning of each child. Planning of the content to suit pupils needs may be best described using the pyramid mode.
- Time- Reduce number or nature of questions or give extra/ extended time to complete assignments and tests. Give frequent breaks and additional instructional time.
- Difficulty level- By understanding the limitations and difficulty level of a student, appropriate aids and support can be used to help overcome or reduce the difficulty to ensure maximum learning.
- Participation- Activities done in the classroom must ensure active and equal participation of all the students.
- Level of Support- Level of support will depend on the nature of difficulty faced by the student in terms of physical, cognitive or sensory issues.
- Alternative Goals- Goals or objectives are changed though the content taught is the same. It is sometimes referred to as functional curriculum as it usually involves the acquisition of "life skills."
- Substitution of the curriculum- The intended curriculum is replaced by an easier one. This is usually practiced in special schools.

Nine Types of Adaptions

Input
Adapt the way instruction is delivered to the learner.

For example:
Use different visual aids; plan more concrete examples; provide hands-on activities; place students in cooperative groups.

Output
Adapt how the learner can respond to instruction

For example:
Allow a verbal vs. written response; use a communication book for students; allow students to show knowledge with hands-on materials.

Time
Adapt the time allotted and allowed for learning, task completion or testing.

For example:
Individualize a timeline for completing a task; pace learning differently (increase or decrease) for some learners.

Difficulty
Adapt the skill level, problem type, or the rules on how the learner may approach the work.

For example:
Allow a calculator for math problems; simplify task directions; change rules to accommodate learner needs.

Level of Support
Increase the amount of personal assistance with specific learner.

For example:
Assign peer buddies, teaching assistants, peer tutors or cross-age tutors.

Size
Adapt the number of items that the learner is expected to learn or compete.

For example:
Reduce the number of social studies terms a learner must learn at any one time.

Degree of Participation
Adapt the extent to which a learner is actively involved in the task.

For example:
In geography, have a student hold the globe, while others point out the locations.

Alternate Goals
Adapt the goals or outcome expectations while using the same materials.

For example:
In social studies, expect one student to be able to locate just the states while others learn to locate capitals as well.

Substitute Curriculum
Provide the different instruction and materials to meet a learner's individual goals.

For example:
Individualize a timeline for completing a task; pace learning differently (increase or decrease) for some learners.

From: Ebeling, D.G. , Ed.D., Deschenes, C., M.Ed., & Sprague, J., Ph.D. (1994). *Adapting curriculum and instruction*
The Center for School and Community Integration, Institute for the Study of Developmental Disabilities.

(T O O L S F O R T E A C H E R S, Curriculum Modifications & Adaptations)

Create different ways to adapt lessons, using the Nine Adaptations as per the needs of those children who require it. Example:

1. Select the subject area (and grade level) to be taught:
math science history literature business P.E. fine arts health
Grade Level: .....

2. Select the lesson topic to be taught (on one day):

3. Briefly identify the *curricular* goal for most learners: By the end of this class, most students will know
.....
.....

4. Briefly identify the *instructional* plan for most learners: As teacher, I will .....
.....
.....

5. Identify the name(s) of the learner(s) who will need adaptations in the curriculum or instructional plan:
.....

6. Now use "Nine Types of Adaptations" as a means of thinking about some of the ways you could adapt what or how you teach to accommodate this learner in the classroom for this lesson.

Input	**Output**	**Time**
Difficulty	**Level of Support**	**Size**
Degree of Participation	**Alternate Goal**	**Substitute Curriculum**

Center for School & Community Integration, Institute for the Study of Developmental Disabilities, Indiana University, Bloomington, IN

Individual Adaptation Plan:

From an inclusive point of view, the teacher should not be making separate programes for students; but a common one that benefits all and at the same time meet the specific needs of diverse learners, i.e. the teacher should find ways to meet the needs within a class, by using a variety of approachess. A teachers role is very crucial in inculcating inclusive culture in the the classroom and the school as a whole.

Profile of Inclusive Teachers: Four core values relating to teaching and learning have been identified as the basis for work of all teachers in inclusive education. These 4 core values are:

a) Valuing learner diversity
b) Supporting all learners
c) Working with others
d) Continuing professional development

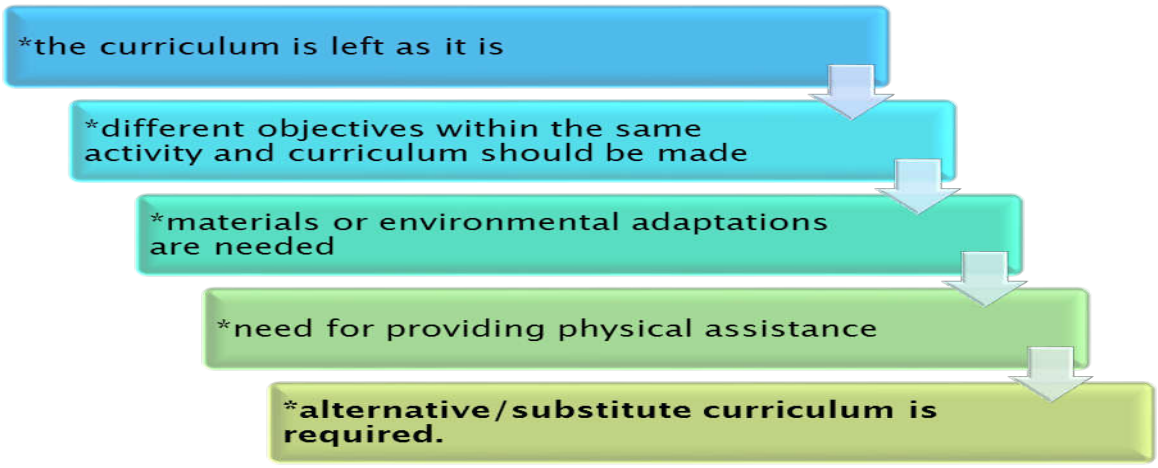
Valuing learner diversity - ➡ **Student Level** learner difference is considered as a resource and an asset to education; Teacher-child interactions,one-to-one interactions, individual learning support, belonging relationships
The areas within this core value relate to: - Conceptions of inclusive education; - The teacher's view of learner difference.
Supporting all learners - ➡ **Classroom Level** teachers have high expectations for all learners' achievements; teacher-group interactions and peer interactions
The areas within this core value relate to: - Promoting the academic, practical, social and emotional learning of all learners; - Effective teaching approaches in heterogeneous classes.
Working with others - ➡ **School Level** collaboration and teamwork are essential approaches for all teachers;
The areas within this core value relate to: - Working with parents and families; - Working with a range of other educational professionals.
Continuing professional development - ➡ **School and Community Level** teaching is a learning activity and teachers take responsibility for their own lifelong learning.
The areas within this core value relate to: - Teachers as reflective practitioners; - Initial teacher education as a foundation for ongoing professional learning and development.

Providing Support to Students with Disability in General Education Classrooms or in Mainstream Schools:

A. ***Student Level Support:*** Individual education planning for students with learning difficulties as a tool for evaluating student learning and student support. An IEP is an important tool to help list down the adaptations required for a child with learning difficulties. Basic principles of an IEP

a) Educational needs are central
b) Evaluating interactions
c) The teacher matters
d) Effective approaches are chosen
e) Strengths-based collaborative approach
f) Systematic and transparent

After an IEP is made, it is important to check if the student can learn, if-



B. *Classroom Level Support:* Strategies for classroom interactions in inclusive education. *How to access the general curriculum without compromising on academic and social participation?* Support, accommodations and modifications to individual goals can be made so that they can be part of the immediate (social) environment; as 'natural' resources they align with group interactions/ activities and chronological age in the group.

Program Matrix for In-Class Support

1. Exploration

Activities → ***Individual Goals*** ↓								

What would be the best moments of the day/week to monitor individual goals? Who will monitor or assess these goals? What are moments when participation is easy? When is it hard to reach?

By overlooking daily or weekly routines, moments with natural or universal support and moments with higher need for extra support can be identified

(De Vroey, A. (2016), Inclusive Education)

Example:

a) Write down the typical activities in a school day of a child in the first row, as shown below.
b) Write down the individual goals of a child in the first column.
c) Now see where can the individual goal be best achieved in the routine and put a mark '*xx*'
d) (or any other)below that particular class/ activity.

E.g. Typical activities in a school day of _____ (child 's name)

Activities → ***Individual Goals*** ↓	**Assembly**	**Writing**	**English**	**Math**	**Art &Craft**	**Lunch Break**	**Science**	**Games**
1.Eye hand Coordination		*Xx*			*xx*	*Xx*		*xx*
2.Matching colours		*xx*		*xx*	*xx*	*Xx*		*xx*
3.Speech- clear speech	*Xx*		*Xx*			*xx*		*xx*
4.Physiotherapy - Independent walking	*Xx*					*xx*	*xx*	*xx*
5.Increase peer interaction	*Xx*				*xx*	*xx*		*xx*

2. Planning, Participation and Learning *How Group Activities and Individualized Work be aligned?* An example is shown in the columns below, where the group goals of a lesson to be taught to the whole class are written down and for students who require adaptations, their individual goals are fitted or aligned against the common group goals in the next column. (The same is with the materials). This way their individual needs are met and participation in learning is ensured.

Group Goals	**Individual Goals**
Activities/ Lesson Sequence	***Participation of students with extra support and/or program needs (alignment)***
- Group instruction **- Group discussion** **- Individual work** **- Presentation of individual work**	**- Group instruction, peer support** **- Group discussion, explicitly invited to join** **- Small group work, co-teacher support + closing with peer support** **- Presentation of individual work with peer support.**
Materials	

(De Vroey, A. (2016), Inclusive Education)

(This is just an example. Plan your own activities and lesson sequence)

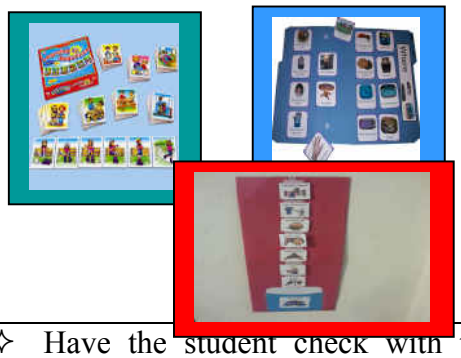
Collaborative models of support enhances 'full classroom participation': they allow teachers to explore and install a variety of lesson structures and activities for all. In-class support is plural support: sometimes two teachers, take on several roles and tasks, sometimes peers support students with a disability.

1.7 Disability Specific Accommodation and Adaptations

<table>
<tr><th></th><th>Assistive Teaching Aids and Adaptations</th><th>Other Adaptations</th></tr>
<tr><td>1.7.1 Physical Disabilities</td><td>✧ Grip handles.
✧ Modify writing material using paper clips etc. To hold the paper while writing.
✧ Broaden space between lines, for writing.
✧ Large felt-tip pen or modified pens/ pencils/ colour pencils.
✧ Weighted bracelets.
✧ Broad spaces between lines.
✧ Reading stand.
✧ Adapt text book to help turn pages
✧ Raised edges of the tray or the table
✧ Carbon paper.
✧ Communication boards.
✧ Audio tapes, adapted computer technology.
✧ Assistive Technology</td><td>✧ Proper positioning and seating arrangement.
✧ Levelling of all areas of school with ramps.
✧ Classrooms library, labs etc. on the ground floor.
 
  </td></tr>
<tr><td>1.7.2 Visual Impairment</td><td>✧ Braille.
✧ Tactile / embossed materials.
✧ Smell, taste, feel.
✧ Raised fonts.
✧ Models/ 3D models.
✧ Tactile graph sheet .
✧ Real life objects.
✧ Real life experiences/ practical work.
✧ Demonstrations by 'Hand over hand'.
✧ Electronic text.
✧ Audio formats.
✧ Verbal descriptions
✧ Large Print.
✧ Use contrast.
✧ Books on tape.
✧ Writing Slates, Stylus, Braillers, Tayler Frame.
✧ Geometrical Kit.
✧ ABACUS, Magnifiers.
✧ Refreshable Braille Displayer.
✧ Provide carbon or xerox copy of notes.
✧ Bold/ highlight lines for ease of writing.
✧ Assistive Technology</td><td>✧ The common adaptations mentioned above are to be considered.
✧ Appropriate lighting: additional lighting or reduced lighting.
 
 
 
  </td></tr>
</table>

1.7.3 Hearing Impairment	✧ Sign language, lip reading ✧ Use pictures ✧ Sight words/ Flash cards of words/ pictures ✧ Real objects, real experiences ✧ Mind mapping ✧ Write key points on the board or chart. ✧ Highlighting text/ key words ✧ Use of visual supplements (projected materials, whiteboard, charts, vocabulary lists, lecture outlines) ✧ Amplification & Assistive Devices, Captioning or scripts for announcements or videos. ✧ Assistive Technology	✧ Enhance lip reading conditions. ✧ Provide extra practice. ✧ Allow extra time for processing information. ✧ Step-by-step directions. ✧ Repeat or rephrase information when necessary. ✧ Frequently check for understanding.  
1.7.4 Speech and Language Disorders	✧ Use visuals to support expressive language skills. ✧ Pictures or written cues can be used to prompt the student to use a longer utterance or initiate a phrase within a specific situation or activity. ✧ Sorting and grouping, similarities and differences to increase vocabulary. ✧ Use pre-planning strategies for oral and written tasks. Talk out the student's story or ideas first. Then help the student organize thoughts by creating a task outline. ✧ Use visuals, symbols or photos to help students organize and communicate their thoughts. ✧ Include visuals (e.g., photos, illustrations, symbols) when giving instructions. ✧ Use natural gestures to give students added cues about what you want them to do. ✧ Cues and routines. ✧ Assistive Technology  	✧ Repeat back what the student has said, modeling the correct pronunciation, word form or sentence structure. ✧ Provide the student with choices of correct grammar, sentence structure or word choice to help them process the correct form or word to use. ✧ To facilitate students' speech intelligibility and expressive language skills, encourage them to slow down while speaking and face their communication partner. ✧ Prepare students for verbal question-answering (inform them of when they will be called upon; allow preparation time for a response; provide extra time when they are responding) ✧ Help students connect new words and information to pre-existing knowledge. ✧ Reduce auditory and visual distractions. in the classroom. ✧ Keep directions short and simple. ✧ Break tasks and assignments into short, easy-to-manage steps. Write down these steps on the board or students' desks so they can use them as a reference.

1.7.5 Intellectual disability	✧ Objects, pictures. ✧ Sight words/ Flash cards of words/ pictures. ✧ Colour coding. ✧ Tactile materials. ✧ Adapted worksheets. ✧ Verbal descriptions. ✧ Models. ✧ Real life objects. ✧ Mind mapping. ✧ Multisensory approach. ✧ Real life experiences/ practical work. ✧ Provide an outline of what is to be taught. ✧ Assistive Technology	✧ Teach one concept at a time. ✧ Teach one step at a time. ✧ Task analysis. ✧ Opportunities to practice. ✧ Use physical and verbal prompting. ✧ Repetition is important. ✧ Small group or individual instruction is required.  
1.7.6 Specific Learning Disabilities	✧ Visual or multisensory materials. ✧ Real life experiences/ practical work. ✧ Mnemonic aids/devices. ✧ Sight words. ✧ Mind mapping. ✧ Overhead/outline for desk use. ✧ Taped textbooks, highlighted textbooks. ✧ Adapted worksheets. ✧ Bold/ highlight lines for ease of writing. ✧ Colour coding. ✧ Large print material. ✧ Word processor/spell study sheets/summary sheets/outlines of most important facts, vocabulary. ✧ Multiplication cards, calculator. ✧ Highlight areas where they should write. ✧ Assistive Technology (Taped lectures) .	✧ Time for repeated review or drill. ✧ Reduction of paper/pencil tasks. ✧ Shortened assignments. ✧ Visual demonstrations. ✧ Presentation of material in small steps. ✧ Read or paraphrase subject matter. ✧ Instructions/directions given in different channels (written, spoken, demonstration) ✧ Assistance with note taking. ✧ Manuscript writing rather than cursive. ✧ Small group or individual instruction may be required.   

1.7.7 Autism Spectrum Disorder	✧ Objects, pictures, words with illustrated pictures. ✧ Sight words/ Flash cards of words/ pictures. ✧ Real life experiences/ practical work. ✧ Multisensory approach. ✧ Visual cues/ support, Schedules, Social stories, Calendars. ✧ Work systems. ✧ Highlight areas where they should write. Allow flexibility in handwriting . ✧ Bold/ highlight lines for ease of writing. ✧ Colour coding. ✧ AAC, computers to type, communication cards.	✧ Avoid clutter. ✧ Reduce the language while teaching any lesson. Some parts may need to be rewritten while some may need to be dropped temporarily. ✧ Shadow teachers. ✧ Talk and discuss with the students, about how much work they can do and how much can be expected from them. ✧ Labeling of the environment for literacy ✧ Provide short sensory breaks to help the student refocus. 
1.7.8 Mental Behaviour	✧ Use of technology/ assistive technology (e.g., computer, digital voice recorder). ✧ Provide a Schedule. ✧ Write instructions on the board. ✧ Begin the class by summarizing the important points to be discussed. ✧ Assistive Technology ✧ Recorded books 	✧ Have the student check with the teacher or have the teacher check with the student to make sure that assignments have been written down correctly. ✧ Reduce school workload when necessary. Reduce homework when possible. ✧ Modify the child's class schedule or reduce the time spent at school. ✧ When energy is low, reduce academic demands; when energy is high, increase opportunities for achievement.
1.7.9 Neurological Chronic Conditions	✧ Multiple-choice answers if your child has trouble recalling information. ✧ Use large print, instead of script writing. ✧ Try using weighted pens or pencils and wrap black electrical tape around the barrel for additional grip. ✧ Type notes or letters on a computer or type writer instead of writing. ✧ Assistive Technology	✧ Reduction in homework if your child has extreme fatigue or problems with writing. ✧ Frequent breaks if your child has fatigue or difficulty concentrating.  

1.7.10 Multiple Disability.	✧ Objects. ✧ Tactile/ embossed materials. ✧ Verbal descriptions. ✧ Models/ 3D models. ✧ Real life objects. ✧ Real life experiences/ practical work. ✧ Demonstrations by 'Hand over hand'. ✧ Multisensory approach. ✧ Bold/ highlight lines for ease of writing. ✧ Adaptive aids and equipment. ✧ Assistive Technology	✧ Teach one concept at a time. ✧ Teach one step at a time. ✧ Task analysis. ✧ Communicate at the level of the child ✧ Using partial participation ✧ Small group or individual instruction  
1.7.11 Deaf Blind	✧ Object symbols ✧ Gestures ✧ Pictures ✧ Finger spelling ✧ Braille ✧ Sign Language ✧ Large print ✧ Tactile/ embossed materials. ✧ Multisensory approach: Smell, taste, feel. ✧ Demonstrations by 'Hand over Hand', 'Hand under Hand'. ✧ Assistive Technology ✧ Calendar schedules using objects.	✧ Teach one concept at a time. ✧ Teach one step at a time. ✧ Task analysis. ✧ Speak to the students even if you think they can't hear you. ✧ Exploring objects should be done in a "nondirective" way, allowing the individual who is deaf blind to have control ✧ Allow time for the student to respond. ✧ Organization of the environment for mobility ✧ Communicate at the level of the child

Assistive aids, support and environment required for a child to learn in a classroom. The following adaptations are common in the disabilities mentioned below:

a) Structure the student's environment to accommodate his or her special needs.
b) Seating to reduce distractions.
c) Frequent breaks.
d) Speech should be clear and instructions specific.
e) Group activities, peer support, buddy system, scribes.
f) Teach students in small groups or one-on-one, if possible.
g) Extra time for completing the work and assessments.
h) Use technology to record students work, e.g. digital photography, tape and video.
i) Flexible mode of assessment.

1.8 Summary

- The National Policy on Education (NPE, 1986) proposed the National Curriculum Framework as a means of evolving a national system of education meant for all students.
- The NCF 2005 lays down what should be taught and how. It proposed five guiding principles to be followed by schools and educational institutions.
- A Curriculum includes academic subjects and the overall experiences a pupil receives in the school. Syllabus is a part of a curriculum.
- Curriculum Adaptations are changes made to the educational environment so that 'All' children learn. They are not intended to lower the educational standards.
- Accommodations and modifications are two aspects of adaptation.
- There are nine types of adaptations, one of which that is 'Substitution' is usually used in special schools.
- Individual Education Plans are important to realize the Individual Adaptation Plans.
- Individual Adaptations in 'In Class Support' is highly feasible in an inclusive set up as individual goals are merged in the daily routine and can also be aligned with the group goals in a lesson.
- Curriculum adaptations differ for different categories of disabilities though some aspects may be common.
- Curriculum adaptations made for children with disabilities can benefit all children.

1.9 Experiential Learning

1. Teach in an inclusive set up wherein children with special needs are studying:
   a) adapt the content (language area)
   b) make teaching learning material
   c) adapt the assessment procedure
2. Do a case study on two children with different disabilities.
   a) Case 1: make individual goals and adapt them using the Nine Types of Adaptations
   b) Case 2: see how you can merge these goals in their daily routine using the Program Matrix for In-Class Support.
3. Does giving fewer questions in class or for homework mean a modified program?
4. If the child is receiving adaptations only, is it enough to attach an adaptations checklist with the report card or do we write an IEP indicating the adaptations the child requires?
5. What are the implications of adaptations? Do they need to be done forever?

1.10 Check Your Progress

1. Give the full form of NCF.
2. Write down the guiding principles proposed by NCF 2005.
3. What is a curriculum?
4. What is curriculum adaptation?
5. State the difference between adaptations, accommodations and modifications?
6. Name the different types of adaptations.
7. What assistive devices are used for children with visual impairment and multiple disabilities?
8. What kind of adaptations would you make for a child with physical disabilities?
9. What teaching learning materials would you use for children with neurological chronic disorders?

10. What adaptations would be required for children with hearing impairment in a classroom?

1.11 Unit End Assignments

1. Explain the different types of adaptations. Taking into consideration any disability of your choice, write down the kind of adaptations that they would require. Make a lesson plan by creating ways to adapt a lesson using the different types of curriculum adaptation.
2. Take a case of a child in a regular classroom who require individual adaptation plans. List down at least 5 individual goals. Using the Program Matrix, merge these goals in the daily routine of the child. Then align the group and the individual goals of the student who require adaptations.
3. Adapt a lesson keeping in mind the needs of children with different disabilities and children without disabilities.

1.12 Assignment for Self-Evaluation

1) What kind of adaptations do you make for yourself in your daily life? Now look at the adaptations required for children with different disabilities and write down the adaptations that are similar to yours.
   OR
2) What are the criteria you would consider before adapting a curriculum? Based on these criteria adapt a lesson for a child with intellectual impairment.

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Unit 2: Curriculum Transaction

2.1 Objectives

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

- plan differentiated learning in inclusive classroom
- understand and implement peer tutoring in inclusive classroom
- formulate strategies for co-operative learning in inclusive classroom
- develop activity based learning material
- manage multi-level classroom

2.2 Introduction

Curriculum is a written plan that drives instruction. It delineates the skills and concepts taught and evaluated to enhance student achievement. The term "curriculum" is generally understood as the courses or programs of study offered by an educational institution. It is derived from the Latin word *"currere"* or "*to run*" as it to run a race course. Curriculum Transaction is the effective and desired implementation of the curriculum contents on the basis of aims and objectives listed in the curriculum. Curriculum Transaction incorporates effective planning for providing learning experiences for its learners, organization of planning, administration/implementation of the organized planning and evaluation of the implementations by the implementer and the experts in the relevant field.

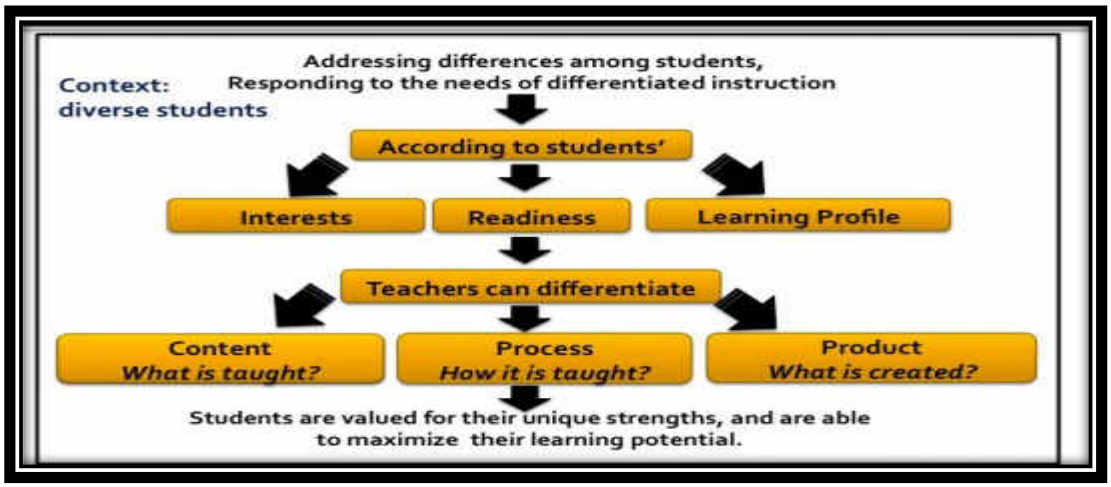
Curriculum Transaction or Curriculum management is the process of planning and organizing the curriculum in a particular subject area for different levels of education and continuously monitor it while being implemented. With changing time, curriculum should also change reflecting the needs and aspirations of the people. There cannot be a uniform curriculum for all the countries for all the time, because education is related to social, economic and political changes in the country. Curriculum content should be based on current information and not on the past information that has been proved to be false or outdated and unusable. There is therefore need for constantly changing and updating the curriculum content. In case of curriculum transaction for children with special needs, special educators should have knowledge about differentiated instruction, multi-level instructions, peer tutoring and co-operative learning.

2.3 Differentiated Learning

In order to be fair to our students and facilitate learning of all students, we need to adapt or modify the curriculum so it "***fits***" the students' learning needs. Teachers differentiate the curriculum so they do not discriminate and teach to only a select group of students (i.e., only those students who are at, or near, year (grade) or age level ability in the prescribed curriculum). Teachers offer students a variety of learning experiences to meet their different learning needs.
Before understanding differentiated learning, let us understand the least and most effective teaching (Tomlinson, 1995, 1999).

Least effective teaching includes the following parameters:	***Most effective teaching includes the following parameters:***
1. Presenting large amounts of material at a time. 2. Failing to guide student practice 3. Giving little time for student processing of the new material 4. Expecting all students to get new material the first time 5. Failing to prevent students from developing misconceptions	1. Presenting smaller amounts of material at any time 2. Guiding student practice as students worked problems 3. Providing for student processing of the new material 4. Checking the understanding of all students 5. Attempting to prevent students from developing misconceptions

Differentiated instruction is a method of designing and delivering instruction to best reach each student. Differentiation is a way of teaching, it's not a program or package of worksheets. It asks teaches to know their students well so they can provide each one with experiences and tasks that will improve learning. According to Carol (1999), differentiation means giving students multiple options for taking in information. We can say that differentiation instruction means that you observe and understand the differences and similarities among students and use this information to plan instruction.



Key principles that form the foundation of differentiating instruction:

1. *Ongoing formative assessment*: Teachers continually assess to identify students strengths and areas of need so they can meet students where they are and help them move forward.
2. *Recognition of diverse learners*: The students we teach have diverse levels of experience and experience with reading, writing and thinking, problem solving and

speaking. Ongoing assessments enable teachers to develop differentiated lessons that meet every student's needs.

3. *Group work*: students collaborate in pairs and small groups whose membership changes as needed. Learning in groups enables students to engage in meaningful discussions and to observe and learn from one another.
4. *Problem solving*: the focus in classroom that differentiate instruction is on issues and concepts rather than "the book" or the chapter. This encourages all students to explore big ideas and expand their understanding of key concepts.
5. *Choice*: Educators offer students choice in their reading and writing experiences and in the task and projects they complete. By negotiating with students, educators can create motivating assignments that meet student's diverse needs and varied interest.

It can be seen that differentiating instruction asks educators to continually strive to know and to respond to each students needs to maximize learning. Ways to differentiate Instruction (*Tomlinson*, 1995, 1999; Winebrenner, 1992, 1996): *Teachers can differentiate instruction through four ways:*

1] Content *:* the teacher may differentiate the content by designing activities for groups of students that cover various levels of Bloom's taxonomy (remembering, understanding, applying, analyzing, evaluating and creating). Students who are unfamiliar with a lesson may be required to complete tasks on the lower levels (remembering and understanding). Students with some mastery may be asked to apply and analyze the content and students who have high levels of mastery may be asked to complete tasks in the areas of evaluating and creating. *Example: match vocabulary words to definitions.*

2] Process*:* Student has a preferred learning style and successful differentiation includes delivering the material to each style; visual, auditory and kinesthetic and through words. Not all students require the same amount of support from the teacher and students could choose to work in pairs, small groups or individually. While some students may benefit from one on one interaction with a teacher or classroom side, others may be able to progress by themselves. Teachers can enhance student learning by offering support based on individual needs. *Example: allow auditory learners to listen to audio books.*

3] Product*:* The product is what the student creates at the end of the lesson to demonstrate the mastery of the content. This can be in the form of tests, reports or other activities. Teachers may assign students to complex activities that show mastery of an educational concept in a way the student prefers based on learning style. *Example: read and write learners write a book report.*

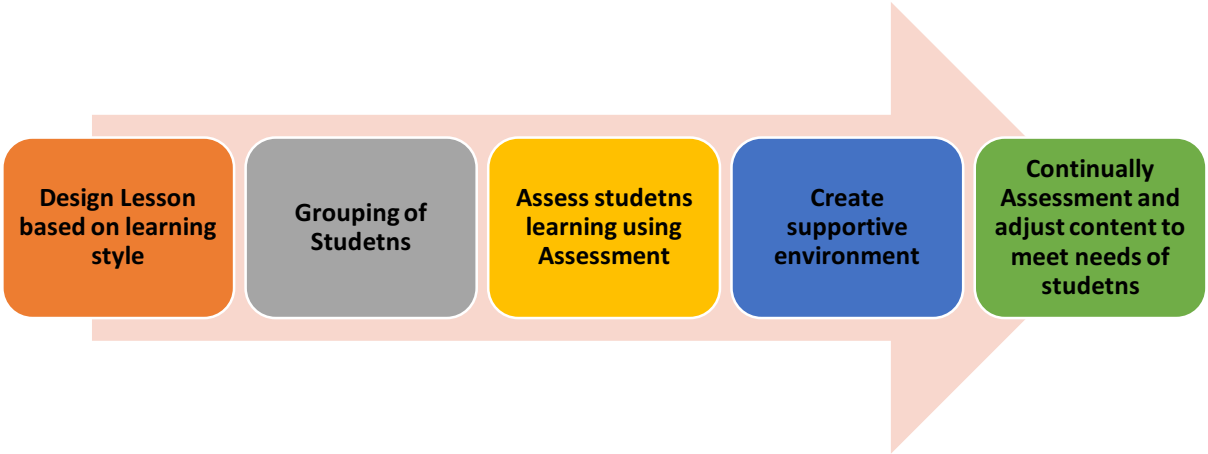
4] Learning Environment*:* The conditions for optimal learning include both physical and psychological elements. A flexible classroom layout is key, incorporating various types of furniture and arrangements to support both individual and group work. Psychologically speaking, teachers should use classroom management techniques that support a safe and supportive learning environment. *Example: group the students to discuss the assignment.*

Table # 1 : Pros and Cons of Differentiated Instruction

Pros	Cons
Research shows that differentiated instruction is effective for high ability students as well as students with mild to severe disabilities.	Differentiated instruction requires more work during lesson planning and many teachers struggle to find the extra time in their schedule.
When students are given more options on how they can learn material, they take on more responsibility for their own learning.	The learning curve can be steep and some schools lack professional development resources.
Students appear to be more engaged in learning and there are reportedly fewer discipline problems in classroom where teachers provide differentiated lessons.	Critics argue there isn't enough research to support the benefits of differentiated instructions outweighing the added prep time.

Differentiating instruction may mean teaching the same material to all students using a variety of instructional strategies or it may require the teacher to deliver lessons at varying levels of difficulty based on the ability of each student. Formative assessment is an essential ingredient of this method.

Flow Chart # 1: Differentiation in the Classroom



To, differentiate instruction is to recognize students' varying background knowledge, readiness, language, preferences in learning and interests; and to react responsively. Differentiated instruction, although somewhat still developing in educational settings has received significant recognition. When combined with the practices and principles of UDL, differentiated instruction can provide educators with both theory and practice to appropriately challenge the broad scope of students' in classrooms today.

DI and UDL: Are they the same or different?
Differentiated Instruction is a philosophy and decision-making process teachers use to enhance the match between the curriculum and students learning needs (e.g., interests, readiness, prior knowledge). It provides different avenues or pathway for students to acquire rigorous content, to process making sense of ideas, and/or developing products that display what they have learned. It originated in the context of regular education. The goal of DI is to honor student learning differences and increase the achievement of all students.
Universal Design for Learning is intended to increase access to learning by reducing physical, cognitive, intellectual, and organizational barriers to learning, as well as other obstacles. It arose in the special education context. The goal of UDL is to minimize barriers for students and increase access

2.4 Peer Tutoring

Peer tutoring is a flexible, peer-mediated strategy that involves students serving as academic tutors and tutees. Typically, a higher performing student is paired with a lower performing student to review critical academic or behavioral concepts. Many a time's people refer peer tutoring to peer teaching. *Peer teaching not to be confused with peer instruction* which is a relatively new concept designed by Harvard professor Eric Mazur in the early 1990s, peer teaching is a method by which one student instructs another student in material on which the first is an expert and the second is a novice

2.4.1 Peer tutoring in the classroom:

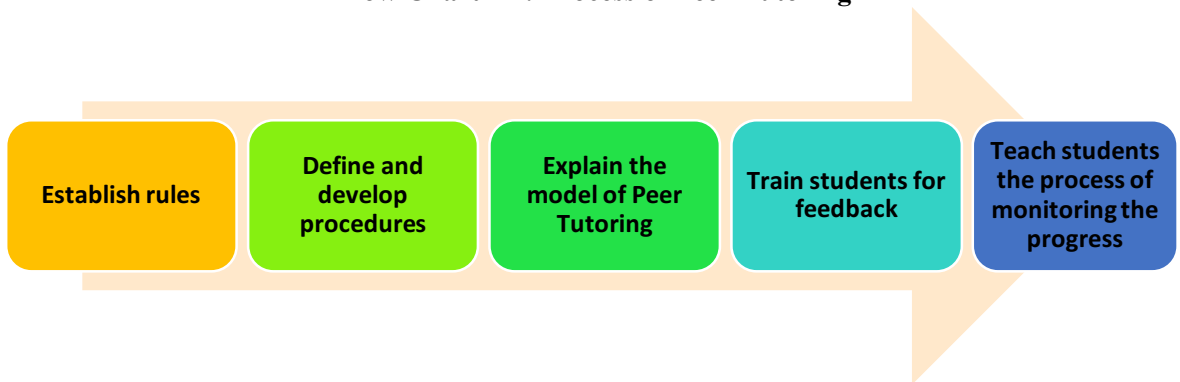
Peer tutoring is an organized learning experience in which one student serves as the teacher or tutor, and one is the learner or tutee. It gives students an opportunity to use their knowledge in a meaningful, social experience (Conrad, 1974). Peer tutoring is the process between two or more students in a group where one of the students acts as a tutor for the other group-mate(s). Peer tutoring can be applied among students of the same age or students belonging to different age groups. Encouragement of peer tutoring is a useful strategy that can be applied effectively by teachers in many cases in both mono-grade and multigrade schools.

It is useful to define two types of peer tutoring, (a) incidental and (b) structured peer tutoring. *Incidental peer tutoring* often takes place, either at school or while students are playing after school or when they are socializing. Whenever children are cooperating, playing or studying and one guides the others, it may be stated that we have a kind of incidental peer tutoring. For example when a student asks his/her classmate to help him/her in Mathematics or asks for tips on how to improve his/her performance while playing a new video game, we have cases of incidental peer tutoring. *Structured peer tutoring* refers to peer tutoring implemented in specific cases and for specific subjects, following a well-structured plan prepared by the teacher. Structured peer tutoring is spontaneously used by experienced teachers who are able to plan well in advance and are familiar on how to combine tutors and tutees appropriately in order to have good results.

2.4.2 Models of peer tutoring: (Maheady, Harper & Mallette 2001)

1. *Classwide Peer Tutoring:* Classwide peer tutoring involves dividing the entire class into groups of 2 or 5 students with different ability levels. Students then act as tutors, tutees or both. It involves highly structured procedures, direct rehearsal, competitive teams and posting of scores.
2. *Cross age Peer Tutoring*: Older students are paired with younger students to teach or review a skill. The positions of tutor and tutee do not change. The older student and younger student can have similar or different skill levels, with the relationship being one of a co-operative or expert interaction.
3. *Peer Assisted Learning Strategies:* groups are flexible and change often across a variety of subject areas or skills. All students have the opportunity to function as a tutor or tutee at different times. Students are typically paired with other students who are at the same skill level, without a large discrepancy between abilities.
4. *Reciprocal Peer Tutoring: t*wo or more students alternate between acting as as the tutor and tutee during each session with equitable time in each role. Often higher performing students are paired with lower performing students. This model utilizes a structured format that encourages teaching material, monitoring answers and evaluating and encouraging peers.
5. *Same Age Peer Tutoring:* Peers who are within one or two years of age are paired to review key concepts. Students may have similar ability levels or more advanced student can be paired with a less advanced student. Same age peer tutoring like Classwide peer tutoring can be completed within the student's classroom or tutoring can be completed across differing classes. Procedures are more flexible than traditional Classwide peer tutoring configurations.

Flow Chart # 2: Process of Peer Tutoring



2.4.3 Advantages of peer tutoring:

The main reasons why peer tutoring is an advantageous teaching strategy are given below.

(a) Children understand easily tutors who are children, since they are cognitively closer to each other. Usually children find their own ways of communicating with other children and many times they can present a subject to other children better than an adult. Children-tutors can give to their class-mates their own models of understanding a subject, using their personal experience, fresh ideas, examples from children's every-day life, even popular communicating symbols that make learning easier.

(b) Peer tutoring not only ensures a good level of effective and efficient communication and cooperation in favour of the tutees but also acts at the benefit of student-tutors as well. The tutors' gains are the following:
   - By spending time in revising the subject maters they have to teach to other students, they result in acquiring deeper and clearer knowledge on the specific subjects they deal with. It is said that we learn 95% of what we teach;
   - Through tutoring, children tutors develop their ability and skill to teach and guide other students;
   - Children tutors enjoy a rise in their self-esteem, feeling that they do something useful and seeing their tutees to improve. They also enjoy respect from tutees. Many times the ambition of older children to be selected as tutors increases competitiveness and results in improving the older groups' standards. Of course care should be taken from the teacher's side to limit as much as possible discrimination in favour of some children-tutors.
   - Structured peer tutoring improves communication and cooperation among students, enhances the team spirit and helps socialization.

2.4.4 Peer tutoring in a multi-grade class:

Although there is no research evidence for peer tutoring in a multi-grade classroom, it is expected that the effectiveness of this strategy is higher in such classes. More specifically it is well-known that in a mono-grade class the teacher has to manage teaching time in such a way as to succeed in a rational sharing among different groups. This implies that for significant time intervals, during which the teacher teaches one group, he/she is not available for all the other groups, the exact time of the interval depending on the number of groups that belong to the same mono-grade class. Allowing young tutors in multi-grade classes to play teaching roles, offers support in managing teaching time.

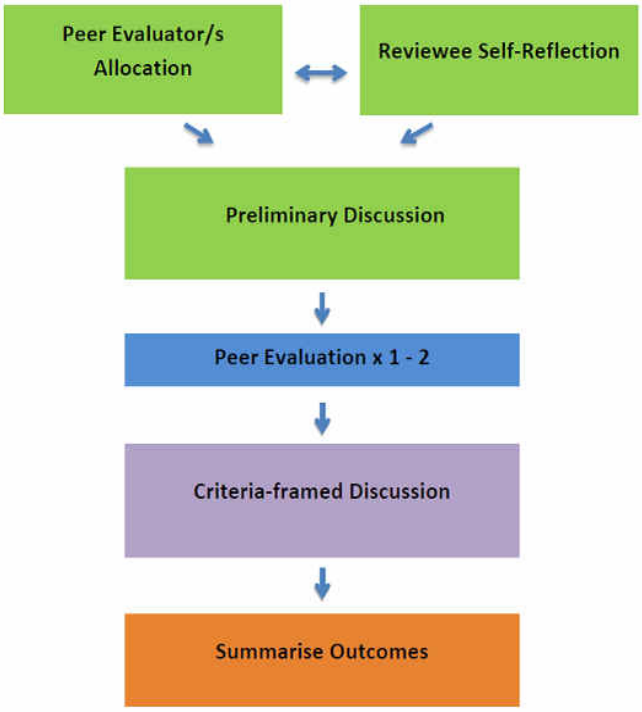
For a successful structured peer tutoring in a multi-grade class there are certain rules that should be followed:

1. It is required that teachers are familiarized with grouping techniques and have already implemented a mixed ability – mixed age grouping in their classroom.
2. It is necessary for the teacher to encourage peer tutoring, preparing tutors as well as tutees in advance.
3. It is necessary for the teacher to "appoint" in an informal, yet clear, way the tutors, -usually among the older students.
4. It is recommended that there is a good preparation of the tutoring' s structure in respect to both, time and cognitive material.
5. It is useful for the teacher to give the appropriate guidance to the tutors, well in advance.
6. It is useful for the teacher to supervise the tutor discreetly, while tutoring.

Peer evaluation is a process of interconnected feedback on quality of teaching. It is a purposeful process of gathering information and evidence about the effectiveness of teaching processes and the educational environment with a view to subjecting it to constructive critical scrutiny. It usually begins

with people identifying what areas they would like feedback on, and works best where the process is reciprocal between peers.

Flow Chart # 3: The process of Peer Evaluation



2.5 Collaborative / Co-operative Learning

Co-operative learning is an educational approach which aims to organize classroom activities into academic and social learning experiences. There is much more to co-operative learning than merely arranging students into groups, and it has been described as *"structuring positive interdependence. "*Co-operative learning is an organized and structured way to use small groups to enhance student learning and interdependence. Students are given a task, better known as an assignment, and they work together to accomplish this task. Each individual has responsibilities and is held accountable for aiding in the completion of the assignment; therefore, success is dependent on the work of everyone in the group. In addition to learning from each other, students also learn how to work as part of a team and have others depend on them.

Benefits of Co-operative Learning in the Classroom:

There are many benefits that can result from using cooperative learning strategies. Here are benefits you might notice after implementing cooperative learning tasks in your classroom:

1. Cooperative learning is fun, so students enjoy it and are more motivated.
2. Cooperative learning is interactive, so students are engaged, active participants in the learning.
3. Cooperative learning allows discussion and critical thinking, so students learn more and remember what they've learned for a longer period of time.
4. Cooperative learning requires students to learn to work together, which is an important skill for their futures.

How to Group Students for co-operative learning?

Co-operative learning takes some time to get used to for both the instructor and students. It may take several tries and the willingness to make adjustments before you are comfortable with this approach to teaching and learning. Co-operative groups are generally comprised of a mix of students based on ability level. Additionally, diverse groups are created based on the skill level of the students. For example, groups may be comprised of four to five students, which include two or three average students, one below average student, and one student who is above average.

In most cases, students should not form their own groups or have the option of changing groups. Once groups have been assigned, you may want to set your classroom up with desks grouped in sets of four or five. Groups should change approximately every two months.

If possible, students should only work together with the same students once a year, but class size is a factor. To ease assignment tasks, students can be numbered one, two, three, and four and keep the same number for all assignments, or numbers can be drawn before each assignment. A simple number system can lessen confusion and help determine student roles for any given task.

Co-operative learning strategies:

1. *Think-Pair-Share* is a method that allows students to engage in individual and small-group thinking before they are asked to answer questions in front of the whole class. There are four steps to this method. The first step, groups of four students listen to a question posed by the teacher. Secondly, individual students are given time to think and then write their responses. Thirdly, pairs of students read and discuss their responses. Finally, a few students are called on by the teacher to share their thoughts and ideas with the whole class. This method can be very useful and work well in the science classroom due to the continual request of science teachers having students formulate hypotheses about the outcome of an experiment before it is done.

2. *Three-Step Interview is a strategy* that is effective when students are solving problems that have no specific right answers. Three problem solving steps are involved in this process. In step one the teacher presents an issue about which varying opinions exist and poses several questions for the class to address. Step two, the students, in pairs become the interviewer and the interviewee. Step three, after the first interview has been completed, the students' roles are switched. After each student has had a turn, the pairs read their interviews to the class. After all interviews have been done, the class writes a summary report of the interview results.

3. *Round Table or Rally Table* are simple cooperative learning structures that cover much content, builds team spirit, and incorporates writing. The roundtable has three steps to it. In the first step, the teacher poses a question that has multiple answers. Step two, the first student in each group writes one response on a paper and passes the paper counter clock wise to the next student. Finally, in step three, teams with the greatest number of correct responses gain some type of recognition. This type of cooperative learning can easily be used in the science classroom. For example, the students may be asked to write as many reptile names as they can. At the end the group with the most reptiles written down is rewarded

4. *Group Investigations* are structured to emphasize higher-order thinking skills such as analysis and evaluation. Students work to produce a group project, which they may have a hand in selecting.

5. *STAD (Student Teams-Achievement Divisions)* Students with varying academic abilities are assigned to 4 or 5 member teams in order to study what has been initially taught by the teacher and to help each student reach his or her highest level of achievement. Students are then tested individually. Teams earn certificates or other recognition based on the degree to which all team members have progressed over their past records.

6. *Jigsaw II i*s used with narrative material in grades 3-12. Each team member is responsible for learning a specific part of a topic. After meeting with members of other groups, who are the "expert" in the same part, the "experts" return to their own groups and present their findings. Team members then are quizzed on all topics**.**

7. *Round Robin Brainstorming or Rally Robin* are a strategies when the class is divided into small groups of 4 to 6 students per group with one person appointed as the recorder. A question is posed by the teacher with many possible answers and students are given time to think about answers. After the "think time," members of the team share responses with one another round robin style. The recorder writes down all the answers of the group members. The person next to (clockwise) the recorder gives their answer and the recorder writes it done then the each person in the group in order (clockwise) gives an answer until time is called. This strategy is very similar to round table. The main difference is that in round robin one student does all the recording for all members of his/her group**.**

8. *Three-minute review* is used when the teachers stop any time during a lecture or discussion and allows teams three minutes to review what has been said with their group. Students in their groups can ask a clarifying question to the other members or answer questions of others.

2.6 Activity Based Learning and Activity Learning Methods

Activity based learning is an active teaching learning methodology. It is more useful in primary classes. Teachers can make teaching more interesting by this method. A lot of activities should be done in our schools. Activities bring activeness, vigor and smartness among the students. Teachers should make their teaching activity based and interesting. Hence, we know that *"Education means all round development of the child*". So, we have to arrange several activities to develop the student's personalities in many ways. Activity Based Learning Methodology (A.B.L.) is a very interesting methodology. Now it is being introduced in primary schools in many states of India. *Tamilnadu (India) is the best example, where a lot of work have been done on Activity Based learning (A.B.L.) and Active Learning Methodology (A.L.M.).*

Activity Based Learning in Primary Education:

Active learning is more effective than other methodologies. It is very useful in primary education. The learning games and another games related activities are very useful in primary school teaching. Educators have to understand the relationship between learning and games. They have to discover the new learning games and have to use games in learning. Now a day's different teaching methodologies are being discovered. Educators have to choose the most effective methodology for their students. Actually, the teaching should be an interesting thing for the teachers and the students also. Now several researchers have been working on "Teacher's active role in smart and active teaching learning methodologies". Schools should be an interesting place for teaching learning experiences. So teachers have to discover the new and interesting methodologies according to the students learning level and their interests.

Activity method is a technique adopted by a teacher to emphasize his or her method of teaching through activity in which the students participate rigorously and bring about efficient learning experiences. It is a child-centered approach. It is a method in which the child is actively involved in participating mentally and physically. Learning by doing is the main focus in this method. Learning by doing is imperative in successful learning since it is well proved that more the senses are stimulated, more a person learns and longer he/she retains.
Pine G (1989) mentions that in an activity based teaching, learners willingly with enthusiasm internalize and implement concepts relevant to their needs. So our understanding on the activity method by now should mean any learning that is carried out with a purpose in a social environment, involving physical and mental action, stimulating for creative action or expression.

Why do we need to use activity based learning method?
The information processing theory in psychology views learners as active investigators of their environment. This theory is grounded in the premise that people innately strive to make sense of the world around them. In the process of learning, they experience, memorize and understand. Students need to be provided with data and materials necessary to focus their thinking and interaction in the lesson for the process of analysing the information. Teachers need to be actively involved in directing and guiding the students' analysis of the information.
It requires active problem solving by students in finding patterns in the information through their own investigation and analysis. With continued practice in these processes, students learn not the content of the lesson but also develop many other skills.

a. It enhances creative aspect of experience.
b. It gives reality for learning.
c. Uses all available resources.
d. Provides varied experiences to the students to facilitate the acquisition of knowledge, experience, skills and values.
e. Builds the student's self-confidence and develops understanding through work in his/her group.
f. Gets experiences, develop interest, enriches vocabulary and provides stimulus for reading.
g. Develops happy relationship between students and students, teachers and students.
h. An activity is said to be the language of the child. A child who lacks in verbal expression can make up through use of ideas in the activity.
i. Subjects of all kind can be taught through activity.
j. Social relation provides opportunity to mix with others.

Kinds of activities*:*
The activities used in this strategy can be generalized under three main categories:

a) *Exploratory* - gathering knowledge, concept and skill.
b) *Constructive* - getting experience through creative works.

c) *Expressional* – presentations.

The activities that educators could focus on:-

1. **Experiencing*:*** watching, observing, comparing, describing, questioning, discussing, investigating, reporting, collecting, selecting, testing, trying, listening, reading, drawing, calculating, imitating, modeling, playing, acting, taking on roles, talking, writing about what one can see, hear, feel, taste, experimenting and imagining.
2. **Memorizing***:* Sequencing ordering, finding regularities and patterns, connect with given knowledge, use different modes of perception, depict.
3. **Understanding***:* Structuring, ordering, classifying, constructing, solving, planning, predicting, transferring, applying knowledge, formulating ones individual understanding, interpreting, summarizing, evaluating, judging, explaining and teaching.

Organizing activities*:* The process of organizing activities must be based on curricular aims bringing together the needs, ideas, interests and characteristics of the children with the knowledge, skill, experience, and personality of the teacher within a given environment. The extent to which the teacher works with students individually or in groups affect the relation the teacher has with each child.

Steps required for Effective Organization of Activities.

a. Planning.
b. Involving children in the learning process.
c. Each child is made an active learner.
d. For each activity ensure you follow the principles of:-
   - ✓ What?
   - ✓ How? Work directions step by step, including:
   - ✓ With whom? Where? How long?
   - ✓ What after?

e. Ensure you give clear instructions before each activity. It must focus on above a, b, c, d.

Role of a Teacher in an Activity Based Method: Educator is quite central to the whole system of ABL. It's required of a teacher to learn the entire ABL system and work effectively with it. He/she has to play the role of both a team player and an authoritarian without really becoming authoritative. An equal attitude may require some un-learning and re-learning for teachers, but when they see it as part of the new culture of education, they are quick to accept it and practice it. They are also able to spend some time on children who are slow.

i. A planner, an organizer and evaluator.
ii. Facilitator.
iii. Decision maker.
iv. Knowledge imparter
v. Disciplinarian

According to Lester, S (2002) there is enough scope for the teachers to show their enthusiasm & creativity. An opportunity exists for teachers to bring out new updations in the material based on their experience. Clearly, there is here, recognition that knowledge is not a pre-determined set of facts. Knowledge generation is a conglomeration of changing perspectives, new information, the opinions of students and teachers, views of others in the community, etc.

ABL is a new teaching cum learning methodology whose central focus is to provide ubiquitous learning. Its central focus is the development of students by modifying the current teaching methodologies. The ABL provides a springboard for freeing the students from falling as the victim to the current system of education that is totally marks-based rather than skill enhancement based. It solves two major problems*: multi-grade classes and inadequate staffing*.

ABL is not a system rather an environment where the teacher can facilitate learning, without dictating the classroom. Also the child learns in a self-directed way, from the study materials that are carefully designed, therefore the teacher absence or occasional unavailability may not be a tragedy.

2.7 Multi Level Teaching

As an administrator (principal) it is imperative that you support your educators in the classroom. Understanding and supporting multi-level instruction is a great way of accomplishing this. Multi-level instruction is the process of teaching one primary objective or concept to the class while allowing for varying outcomes for an individual student or a small group of students. In other words, multi-level instruction allows teachers to deliver on-grade level, standards-based instruction to an entire class, but when appropriate, to respond to any student who may require instruction whether below or beyond the current learner objective. Multi-level instruction is a critical skill for educators. When teachers adjust the learner outcomes for those who require it, students don't become bored from the lack of challenge or disengaged in a lesson that is too difficult or frustrating.

Multi-level instruction provides success for each student within rigorous standards and acknowledges diverse student learner characteristics. Multi-level instruction was originally designed as a means of providing appropriately adjusted instruction for gifted students. Educators quickly found that multilevel instruction processes can and should be followed for every student for whom the stated, on-grade level curricular objectives may need to be adjusted.

Students with mild to severe disabilities are being included in general education classes with increasing frequency and success. However, teaching children with substantial differences in academic abilities together in one classroom still requires that we (educators) learn a great deal. In this sub unit, we describe the typical strategies that schools and teachers who are seeking to be inclusive schools use in coping with substantial differences of ability among their students and suggest that, foremost, we need ways of thinking and talking about inclusive teaching, approaches to teaching children together in tasks where students can learn at their own level, heterogeneously grouped.

Reasons for Establishing Multi-level classrooms:

- *Pedagogical philosophies in favor of multi-level classrooms i.e. a 'continuum of learning' across a two-year span*
- *Non- Availability of space/faculty—i.e. no space/faculty available for special programs*
- *Multi-level classrooms can provide quality learning*

So what does this look like in an actual classroom? The teacher addresses one primary objective or concept to the class while allowing for varying outcomes for an individual student or small group of students. Thus, while the majority of students achieve the objective of the lesson, some may achieve either more challenging objectives or less challenging (but highly relevant) learner objectives at the same time.

Let's use an actual learner objective that an elementary teacher might address in the classroom. As you can see, the teacher begins with an on-grade level, standards-based objective and plans a rigorous and relevant lesson. Then the teacher checks to see if each student in that classroom would be

successful in instruction designed to be mastered. In this teacher's classroom, just as in reality, there are one or more students for whom something different will be expected.

Pause and Think….

How many students will still need further "accommodations or modifications"?

Let's make multi-level instruction as simple as possible. There are ***five broad steps*** in implementing multilevel instruction. This is the multi-level instruction planning format that provides a space for your decisions to be recorded for each of the five steps of the process. When you have completed these five steps, you will have designed a lesson or unit that promotes challenging yet accessible learning for the entire class.

As an educator, you will have also made specific decisions for any student in your class who may require additional support, ranging from a quick accommodation to personal assistance in completing the task.

a) First, review the learner objective you will teach. Determine the exact learner outcome(s) expected for this specific curriculum objective.
b) Next, create a lesson that is designed to teach this learner objective on the grade level intended, and is activity-based, if appropriate. Activity-based instruction engages the student in learning through discovery, application, cooperative groups, or any other strategy that promotes student engagement.
c) After you have designed the draft lesson, review it to be certain that it meets the two criteria of on-grade level and activity-based.
d) Review the learner characteristics of the students in your class. Are there any students who you think may have difficulty mastering the learner objective contained in your lesson without some adjustments or additional support? Who are they? List these students in the first column of the additional instructional decisions section of the form.
e) Finally, complete the sequence of questions that will assist you in making decisions regarding the level of adaptation each student on this list will require in order to successfully participate in this lesson.

Teaching Mathematics to a Classroom of Multi-Level Kids

- ✓ **Integrate math into every part of your day**
- ✓ **Vary your learning centers**
- ✓ **Pair high-performing students with struggling students for group activities**
- ✓ **Play digital games in class**
- ✓ **Build a technology toolkit folder on your classroom tablets or computers**

Strategies for Multi-Level Teaching:

Table 2 # Examples of Multi Level Teaching

Literacy	Science	Mathematics
Choice of books at different levels. Buddy reading. Read-alouds. Individual writing goals. Stick-figure drawing to write a story line. Individual spelling lists.	Experiments with different group roles identified. Notetaking by graphic organizers like webbing. Informational reading at many levels. Heterogeneous work groups help each other with assignments	Math games. Learning groups based on student interest and readiness. Math projects with multiple types of tasks and levels to choose from. Whole class interest related community projects

Some of the multi-level teaching strategies include:

a) Conduct individual reading, writing, and spelling conferences during workshop time. This keeps the teacher focused on what students are learning, helps group children for mini lessons on specific skills, and allows time for notetaking about students' progress, strategies, and interests (Graves, 1994; Tomlinson, 1999; Zemelman, Daniels, & Hyde, 1998).
b) Have children keep journals in which they record their thinking about books and school topics. Use this writing to facilitate discussion groups. This provides insight into their learning and helps them think about what they are reading.
c) Give homework projects related to what the children are learning and that can be done at multiple levels. For example, students may interview a parent about their childhood and write a report about it to share in class.
d) Foster a community where children are expected to help each other. They begin to understand that in a real community they both increase their own skills and encourage everyone to do well.
e) Group students in many different ways for lessons so that they do not know when you are grouping by ability (topics, count off, particular skill, guided reading group).
f) Group heterogeneously most of the time.

Disadvantages of Multi-level Classrooms:

- *Finding appropriate resources and teaching materials*
- *Organizing appropriate groupings within the class*
- *Building and effective self-access center in class*
- *Determining the individual needs of each student*

2.8 Summary

- Just as everyone has a unique fingerprint, each student has an individual style of learning. Not all students in a classroom lean a subject in the same way or share the same level of ability. Differentiated instruction is a method of designing and delivering instruction to best reach each student.
- Tomilson (2001) identifies three elements of the curriculum that can be differentiated: Content, Process and Products.
- To differentiate instruction is to recognize students' varying background knowledge, readiness, language, preferences in learning and interests; and to react responsively.
- Modifications incorporated for a child with specific learning needs may be a] Accomodation b] Adaptation c] Cognitive learning d] Co-teaching and e] IEP.
- Differentiated instruction integrates constructivist learning theories, learning styles and brain development with research on influencing factors of learner readiness, interest and academic growth.
- Collaborative learning is an educational approach to teaching and learning that involves groups of students working together to solve a problem, complete a task, or create a product.
- Peer tutoring is a flexible, peer mediated strategy that involves students serving as academic tutors and tutees. Typically a higher performing student is paired with a lower performing student to review critical academic or behavioral concepts.
- Multi-level teaching is where one lesson is taught to an entire group while meeting the individual needs of each child. Multi-level teaching is an effective approach to instruction

and requires less time than separate instruction. Younger students benefit from being exposed to more advanced skills and older students benefit from demonstrating their skills to younger students.

- Activity Based Learning (ABL) is a methodology where children of different ages are grouped together in one class and learn at their own pace through teacher-facilitated exercises.

2.9 Experiential Learning

Observe an inclusive class, and answer the following questions:

1. **What will you do to modify your teaching to meet the needs of a gifted student?**
2. Differentiate between assessment questions and let students choose their level of challenge.
3. How will Peer Teaching Improve Student Learning in classroom?
4. Design a lesson based on students' learning styles.
5. Do we need to use activity based learning method in the class? If yes then give reasons for the same.

2.10 Check Your Progress

Write short notes on the following:

1. List the challenges to successful inclusion?
2. Collaborative learning activities
3. List the importance of Peer tutoring
4. Meaning of differentiate instruction
5. Define activity based learning
6. Disadvantages of Multi level teaching
7. Constraints of activity-based teaching
8. Learning Styles and Differentiated Instruction
9. Techniques of Co-operative learning
10. Elements of differentiated curriculum

2.11 Unit End Assignments

1. What are the connections among accommodations, modifications, and differentiated instruction?
2. Differentiated instruction and Universal Design for Learning: Are they the same or different?
3. How does collaborative work help with assessment?

2.12 Assignment for Self-Evaluation

1. What factors influence curriculum transaction?

2.13 References

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Unit 3: Adaptations in Co-Curricular Activities

3.1 Objectives

- Understanding the importance that Co-curricular activities develop various facets of the personality of a student.
- Co- curricular activities facilitates in the development of various areas of the individual such as health & fitness, intellectual, emotional, social skills, and encourages a sense of responsibility, positive thinking and independence.
- Co-curricular activities also enables some student to show their talent and creativity and allow them to shine.
- Being able to participate in co-curricular activities enhance social skills and enables social acceptance
- Participation and social acceptance increases self-esteem and self-confidence

3.2 Introduction

Children with Disability seem to have an even harder time participating in extracurricular activities then classroom activities. Not only are there fewer activities catering to them, they also constantly face seclusion or discrimination from their peers. The purpose of education is to foster all round development of the individual. Therefore all-round development means intellectual, physical, and social development. Education plays a fundamental role but for an all-round development there is a need for striking a balance between classroom teaching and also co-curricular activities. Co-curricular activities are those which are undertaken side by side with the curricular activities. A co-curricular activity essentially takes place outside a typical reading and writing classroom experience. It gives the student an opportunity to develop skills that are not possible in a classroom setting.

Co-curricular activities can be divided in three broad areas:-

1. Some activities are for individual participation, that is the person participates in an activity like solo singing, solo dancing, playing an instrument, recitation, art & craft, athletics and other sports like swimming , skating , trekking . These activities can be less competitive and for some children with disability it's a good way to start Co-curricular activities. The competitive element can be reduced even further by encouraging and praising the child for improving on their past performance.

2. Then there are cooperative activities where the members have to work together to help the team succeed. These are team games in sports, quiz and other team competitions. For some children this may be difficult but children can be supported with social stories and practice.
3. There are activities which are highly competitive like sports, and individual competition in areas of music, dance and other art forms. Some children with disability may thrive in competitive activities and some may find it difficult and will need to be introduced to it gently. Children need to learn not just how to win but also how to lose. The teacher needs to use his/her skill to help children cope with both.

The most important thing to remember is that co-curricular activities should be fun and enjoyable.

3.3 Using Co-Curricular Activities for Facilitating Learning

Co-curricular activities facilitate in the development of various domains of mind and personality such as intellectual development, emotional development, social development, moral development and aesthetic development. It also facilitate in Creativity, Enthusiasm, and Energetic domain. Co-curricular activities are defined as the activities that enable to supplement and complement the curricular or main syllabi activities. These are the very important part and parcel of educational institutions to develop the students' personality as well as to strengthen the classroom learning.

Co-curricular activities are the true and practical experiences received by students. To a greater extent, the theoretical knowledge gets strengthened when a relevant co-curricular activity is organized related to the content taught in the classroom. Intellectual aspects of personality are solely accomplished by classroom, while aesthetic development, character building, spiritual growth, physical growth, moral values, creativity, etc are supported by co-curricular activities. Frankness and clarity in language and personality is supported by these activities. It helps to develop co-ordination, adjustment, speech fluency, extempore expressions, etc. among student both at the school as well as college levels.

Co-curricular activities enhance creativity*:* It gives students a chance to think out of the box and get creative ideas of their own. These activities give students a richer learning experience by giving them a chance to think in new ways to solve a problem or answer a question. Co curricular activities provide challenges for students that are different from academic challenges. Students have to come up ideas that are not always found in books. Especially where children have to make up a short play, skit, dance, design, drawing and painting. The disabled and non disabled children together, have to come up with ideas that are often original and creative. The students with disability if they are able to participate (with support) may develop a more positive attitude towards their own disability.

Enhancement of Motor Coordination*:* Eye-hand Coordination, Gross & fine Motor Skills improve, as a result of taking part in different types of co curricular activities. This automatically helps to improve other major skill areas like, Self-help, Writing and Leisure Skills. Most of the co-curricular activities are physically active and get the students out their desks to try out new things in a practical way. Sports, yoga and Dance enhances body & space awareness.

Enhancement of Social Skill: Peer interaction, Social Rules, both Verbal & Non-verbal Communication, sharing, turn-taking, understanding group or team effort, leadership quality can be developed by participating in co-curricular activities. It can facilitate emotional development through winning, loosing, preparing and trying. Children learn to deal with authority and peer relationship in a structured and safe environment. Extracurricular activities channelize energy and in a way that is beneficial for the child.

Enhancing Academic Skills*:* The class room curriculum teaches and educates the child about academic theories while co-curricular and extracurricular activities help the child to apply what he / she has learnt. Different Co-curricular activities enhance academic skills, like- science, math, language, geography etc, and make these subjects more meaningful in their daily life. For example through Games, children can learn concepts in math by keeping scores and time. Children learn languages like with words like - jump, run, throw, catch, speed etc. Children learn the concept of timing and number, through dance and music.

Learn time management skills: Students participating in co-curricular activities learn to manage their time effectively, prioritize among different competing commitments, and be proactive and creative problem-solvers. Often, the students most engaged in co-curricula's also have the strongest time management skills.

Enabling participation in Co-curricular activities of children with special needs: When considering co-curricular activities, teachers need to consider any assistance or adaptation the child may need. For playing music, a child with a visual impairment may be helped by scanning the music and then converting it to Braille. Students with a physical disability can find many musical instruments that have been modified in a wide variety of ways. In drama, students can learn their respective lines through the use of audiotapes or can even use screen readers if necessary. For students who have difficulty in perceiving where to stand on the stage, visuals or tactile markers can be given. Visual or tactile arrows can be marked on the stage to guide the movement of the students.

For children with Autism and ADHD visuals like picture schedules and social stories will enable participation. Children with communication difficulties can use AACs like I pads and tabs with a voice output to enable participation. But there is also human assistance that works very well. For example, peer support can help a child who is visually impaired participate in running races. Sign language teacher can help a child who has hearing impairment communicate with his or her sports trainer or coach. A volunteer or older student can assist a student with disability using a wheelchair while the student participates in a school march or drill. There is always some kind of co-curricular activities a child with disability can participate in. And children need to be able choose which activity they find most interesting. By using different kinds of adaptations every child can participate, because the most important part of schooling is participation.

Role of a Teacher in organising curricular Activities:

a) The teacher must be a good planner so that the different activities could be carried out systematically throughout the year.
b) It should be the duty of the teacher to give more and more opportunity to the child while performing co-curricular activities.
c) Teacher should act as Innovator by introducing some innovative programmes.
d) The teacher must be a good organiser so that the students experienced maximum of it.

e) He/she should too act like as director, recorder, evaluator, manager, decision maker, advisor, motivator, communicator, coordinator, so that the student and child could gained maximum of finer aspects of Co-curricular activities.

Importance of co-curricular activity:

a) These activities are designed to meet the needs of the students and cover a broad / wide range of their abilities and talents.
b) Such activities stimulate the interests in the students and provide equal opportunity to all the students to participate.
c) These activities enhance the learning experience of the students and help in recognizing and developing their inner skills such as leadership qualities, creative or innovative skills etc.
d) Co-curricular activities give the students a chance to think out of their box and get creative ideas of their own with the help of a guide / facilitator.
e) These activities help the students in developing a richer learning experience by giving them a chance to think in new ways to solve a problem or answer a question.
f) Students need to take time outs to do more than just studying and co-curricular activities give them a chance to relax, refresh and mingle easily with others.
g) In short, these activities prepare the students practically for their future.
h) The normal curriculum teaches and educates the child about academic theories while co-curricular activities help the child to apply what he / she has learnt to practice in their practical life.
i) These activities help in developing the grasping power of the child and provide an opportunity to the students to work in teams and thus develop team spirit in them.
j) Most of the co-curricular activities are physically active and get the students out their desks to try out new things in a practical way.

3.4 Assembly and Recess Time

3.4.1 Assembly Time:

For most schools, Assembly Time is a very important occasion. It is an opportunity to come together as a community, to share achievements and stories and to nurture a positive school ethos, where children feels valued and respected. Assembly time is a calm, happy, yet purposeful space where there are high expectations in terms of behavior.

School assembly, clarifies school activities and programs and focuses on co-curricular life. It strengthens work of the school. School assembly should be conducted with complete and active participation of students. Morning assembly should be well-planned. A teacher-in-charge and a committee of students can plan and implement school assembly on a regular basis. Maintaining a black-board to display daily news can also be a part of morning assembly. This news could be pertaining to the school, local community, the state or the nation.

Purposes of a school assembly include the following:

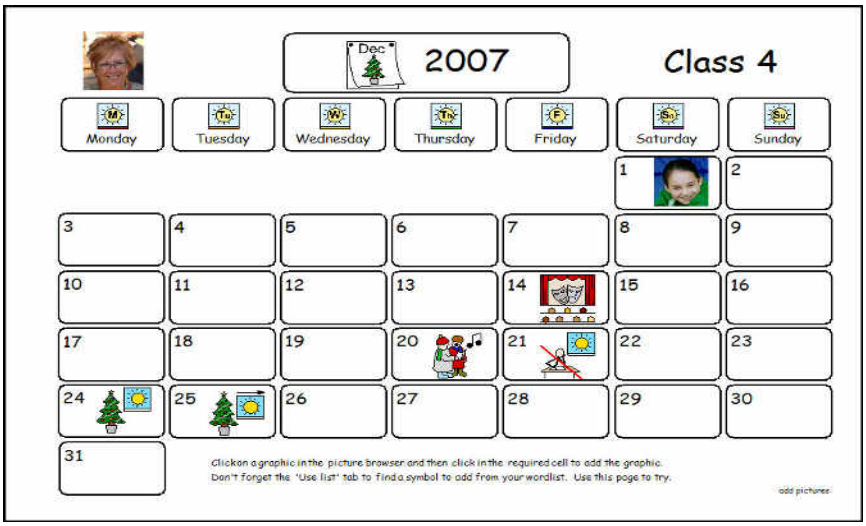
a. To develop a feeling of affiliation and unity among students.
b. To acquaint students with the school program more clearly.
c. To develop in students a sense of identity with the school.
d. To enable students to share their experiences, stories, anecdotes with others.
e. To provide them training in good social behavior desired in public life.

f. To motivate students by positive reinforcement in the form of praise or rewards awarded in public.
g. To celebrate national festivals, Independence Day, republic day, birth days of great leaders and so on.
h. These leaders could be political leaders, scientists, poets, writers and so on.
i. To facilitate moral and religious development of students.
j. To facilitate national integration and secularism through all-religion prayer meetings among students.

Some children with disabilities like those with Autism, ADHD or other related issues may have difficulty participating as Assembly is mostly a social activity.

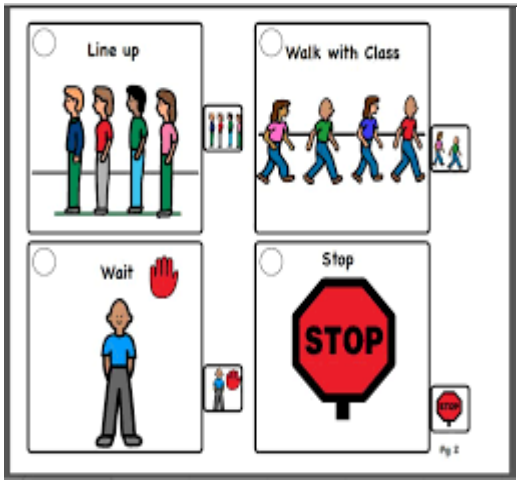
The following points can help children who have difficulty in participating:

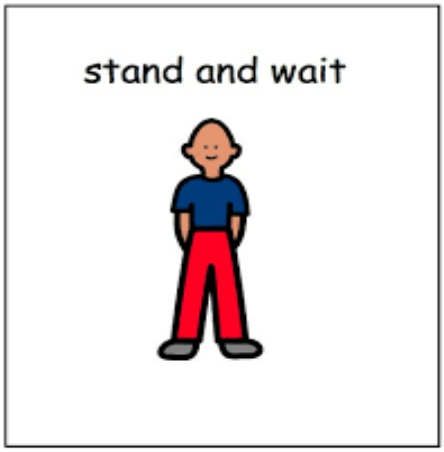
- Social Stories regarding what is Assembly Time and what the children are supposed to do during Assembly.
- Structured Calendar: Days when Assembly Time will take place in the school will be mentioned in the Calendar to increase predictability.

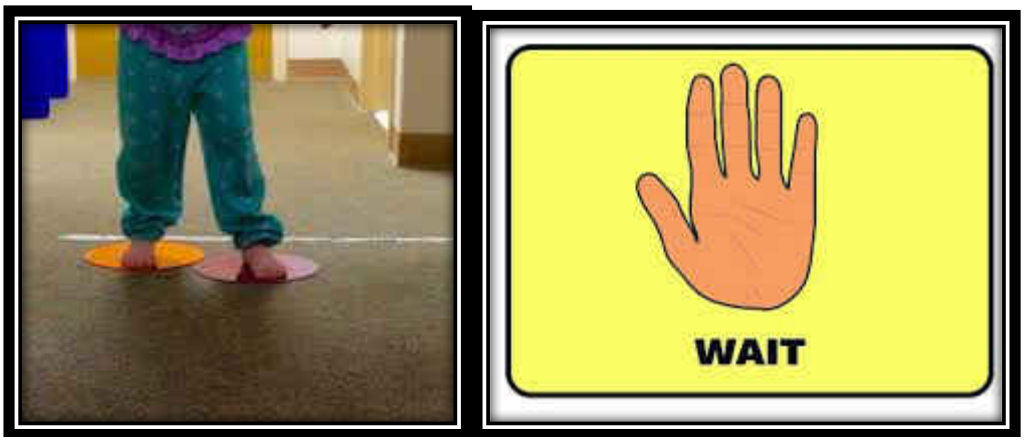


1. *Individualized Schedules:* Assembly Time will be visually represented through schedules to each student with disability who may require it.
2. *Visual Supports:* like- Foot-prints on the floor, which will give the students visual instruction that they are supposed to keep their feet on the foot-prints during the Assembly Time. The student then knows where to stand. The foot prints can be cut out of materials like plastic sheets or cardboards. Some children may just need a specific mark on floor made with chalk.
3. *Wait Card:* a 'Wait Card' will give the student visual cue that he or she has to wait during the Assembly Time. The card can have a drawing of a hand with the word "wait" written across it. The child learns that as long as the card is in his had he has to wait when the card is taken by the teacher the students can move to the next activity.
4. *Reinforcement*: Students can be reinforced with social praise, stars, smiley's or other tangible reinforcers for behaviors like standing , waiting quietly , activities like- a speech, song etc. during Assembly Time.
5. *Creating an Environment which is free from Sensory Overloading*: For some children standing close to the sound system or near a light can cause huge sensory difficulties therefore such a child needs to stand where the sensory overload are reduced.

Visuals for Assembly







3.4.2 Recess time

Recess time can be difficult for children with disabilities. Peers may avoid them and therefore they are left alone during this unstructured and mostly unsupervised time. Without proper structures in the playground, students may feel stressed and anxious. It is a time where some children with disabilities are at risk of being bullied and teased. Teachers can appoint a play ground buddy or circle of friends (that is few children who have a more inclusive attitude) to watch out for such children. The playground buddy's or circle of friends can be encouraged to try to include the children with disability in their games.

The following strategies will help these children to participate:-

a) Putting the playground activities on individualized schedules.
b) Giving visual choices (Schedule) to the students during playground activities.
c) Developing appropriate social stories for the students to describe the playground, the games or activities played there, the game rules.
d) Organize a quiet place in the playground where students can go if feeling overwhelmed. This should be somewhere that is easily accessible and is linked to the play areas.
e) Organizing a 'Buddy System'. A 'Buddy' is a responsible student who will support and guide the student with disability during the playground activities.
f) Making some neuro -typical students as 'Playground Monitors', whose responsibility should be maintaining general playground disciplines. While this system is less specific

than a 'Buddy System', but it is still another safeguard for the students with disabilities and will ensure any inappropriate behaviors like- teasing and bullying in the playground, towards these special-need students will be reported.

g) The students with disabilities might be taught how to play the games in the playground first in an in-house situation with a limited peer group. Then these students will be given opportunity to participate in the playground activities with a larger group.
h) All children can be praised for socially appropriate behaviors or for following rules during the playground activities.
i) We also need to teach the students the safety measures which they should follow while participating in the playground activities.
j) Co-operative games, rather than competitive games in the playground will help to develop positive bonding among the special-needs and the neuro-typical students.
k) Use of visuals and structures extensively in the playground will help these students to participate and to enjoy the playground activities, for example- foot-prints, color-codes, schedules for playing a game, visual instructions, visual timers etc.
l) We also need to design a playground which is safe for students with disabilities. Good maintenance of the playground is essential.
m) There could be separate areas in the playground for group or free-play and rides like- swings, slides, sea-saw etc.
n) Other sensory play like- jumping on the trampoline, using gym-ball, ladder, tunnels, sand-pool, pools with balls etc will be real fun for all children.

3.5 Games, Sports and Physical Activities

Communication is key for all relationships, and the lack of speech cum language can hinder the way children interact with their peers and caregivers. Finding adaptive ways to communicate and play with your nonverbal children can help possibly stimulate speech or facilitate cognitive growth.

Like all children, children with disability need access to sports and games. Sporting games and activities can be modified to include people with disability. In some situations, people with disability can be included with no modifications at all, and in other situations modifications may be needed. Modifications may only be minor, such as a change in a rule or piece of equipment but may provide significant assistance to an individual. Sometimes major modifications are necessary, particularly for people with high support needs.

Adapting and modifying sport is to minimize or eliminate disadvantage caused by the environment in which a sport is played. Modifying sports also enables new rules and equipment to be introduced. All modifications should be continually reviewed and where appropriates phased out or changed.

Modification may include:

a) Reducing the size of the court or playing in an area the where boundary has been redrawn with chalk to reduce the area of play.
b) Playing in a closed of area that is surrounded by wall or fence also helps children with certain disabilities like visual impairment and Autism to play safely and comfortably.
c) Practicing games indoor in a modified form and then taking it outdoors.
d) Lowering heights of basketball hoops , badminton net & volleyball nets .
e) Using balls that may be easier to control.
f) Using balls with bells inside or very bright so it is easier to track.

Modifying Rules:-

a) Having more members in a team reduces the amount of activity required by each player.
b) Having a smaller team by reducing the amount of players to allow greater freedom of movement
c) substituting players multiple times
d) allowing substitute runners in sports such as cricket or shortening the distance the hitter needs to run to be safe
e) Making scoring points simple and very visual to be understood by all.
f) Modify rules of passing or throwing a ball bouncing, rolling or underarm toss, instead of over arm throw.
g) Teaching rules visually and having the visual rules nearby for reference for the children
h) Rules can be modified by simplifying them.

Enhancing skills

Some sports require multiple skills like throwing, catching, dribbling, aiming at a goal. These skills can be enhanced in short sessions targeting the specific skill areas. These skills can be made into simple games with rules and scoring points. As skills improve children can participate more easily in the larger games.

Yoga and exercise

- Rhythmic music can make Yoga and free-hand exercises interesting and fun to do.
- Visual cues, for example- the pictures of 'Ashanas' or exercise can be used as a visual instruction, so that the students can follow which 'Ashana' or exercise they are supposed to do next.
- Use of cut-out mount boards on the floor, so that the individual's disability will know where to place their head while lying down on the floor before starting the 'Ashanas'.
- Use of pictures to show how "Ashanas" should be.

Parallel sports or individual sports

For some children with disabilities playing in a team may be too demanding they may prefer individual sports like swimming , roller skating , trekking and athletics. Swimming and Athletics – children with disabilities may require skills to be enhanced to participate in such sports. They may need to build up strength and stamina like typical children. For some children with disabilities it can even lead to participating in Special Olympics.

Physical Activities:

Since fitness is a main goal of physical education, an instructor should plan to follow these guidelines: "children with disabilities generally display the same physiological responses to exercise found in non-disabled persons. (Be careful, though, because some people with disabilities do not respond the same as those without disabilities, e.g., heat dissipation and heart rate response may be different for a person with a spinal cord injury. Ask the family to consult with their physician.) Although specific disabilities may affect the intensity, duration, and frequency of exercise, individuals with disabilities can benefit from training, including improving their performances. Wheelchairs can be adjusted or modified (by those qualified to do so) to improve physical activity performance. Athletes in wheelchairs play basketball, tennis, and many other sports.

When planning how to teach an individual with a disability, the teacher should focus planning on the individual and not the disability. For instance, consider the following questions. How can an instructor, "help this child stay on task longer, encourage this child to keep trying, challenge this child's intellect, stimulate this child to grow in physical activity and health-related fitness." Finally, the teacher should plan for, and enforce the rules for fair play and inclusion.

When planning for a modification or adaptation in the learning environment there are two key concepts to remember. Those key concepts center on the word "empowerment" and the words "least restrictive." "Empowerment is generally defined as a process through which individuals gain control over their lives, a sense of power equitable with others, and a feeling of responsibility for self, others, and the environment (Sherrill, 2004). In particular, empowerment refers to participating in the governance of any organization pertaining to disability, as captured in the motto "*Nothing about us without us"* (Charlton, 1998)."

3.6 Visual and Performing Arts

Art reflects human emotions and human beings spontaneously express their frame of mind through various art forms. Thus the intellectual mind merges with the artistic streak, giving birth to art. The expression is reflected in various styles like singing, dancing, drawing, Performing Arts: Music, Dance and Drama and Architecture painting, acting, sculpture. Some of these are expressed through live performances and others through visual arts. Sketching, painting, sculpture are visual arts. Singing, dancing, acting are attributes of performing art.

Visual arts and performing arts play a significant role in the overall development of students with disabilities. Learning and then performing allows children with opportunities to shine and perform and increase their self-esteem. Learning and performing teaches self-control and discipline. But children with disabilities will need support and accommodation.

3.6.1 Meaning of visual arts: "Visual Arts" is a modern but imprecise umbrella term for a broad category of art which includes a number of artistic disciplines from various sub-categories.
Visual art usually encompass the following:
1**. Fine Arts**: All fine art belongs to the general category of visual arts. These include activities such as: Drawing, Painting, Printmaking and Sculpture, along with associated activities like Graphic art, Manuscript Illumination, Book Illustration, Calligraphy and Architecture.
2. Contemporary Arts : The visual arts also include a number of modern art forms, such as: Assemblage, Collage, Mixed-media, Conceptual Art, Installation, Happenings and Performance art, along with film-based disciplines such as Photography, Video Art and Animation, or any combination thereof.
3. Decorative Arts & Crafts: In addition, the general category of visual arts encompasses a number of decorative art disciplines and crafts, including: ceramics and studio pottery, mosaic art, mobiles, tapestry, glass art (including stained glass), and others.
4. Others: Wider definitions of visual art sometimes include applied art areas such as graphic design, fashion design, and interior design. In addition, new types of Body art may also fall under the general heading of visual arts. These include: tatto art, face painting, and body painting.

3.6.2 Meaning of Performance Arts:

The performing arts range from vocal and instrumental music, dance and theatre to pantomime, sung verse and beyond. They include numerous cultural expressions that reflect human creativity and that are also found, to some extent, in many other intangible cultural heritage domains. The different types of performing arts are theater, musical theater, dance, music, acting, magic and circus acts.

As a form of performance art, acting involves impersonating a character. The different emotions and motivations of characters are displayed through various expressions, intonation and body movements. Often, actors must use empathic skills in order to convey the character in a convincing manner. Another closely related form of performing arts is musical theater. Musicals are plays that integrate songs in place of some spoken words and plot details. Performers often alternate between speaking and singing during the production.

The visual arts are a way of expressing feeling, emotion, opinion, or taste through visual means such as photography, painting, sculpting, and drawing, whereas the performing arts are ways to express opinion, emotion, feeling, or taste by means of performance such as theatre, music, and public speech.

3.6.3 Skills Enhanced by Arts (Phillips, 2012)

1. **Creativity -** In an arts program, children are asked to recite a monologue in different ways, create a painting that represents a memory, or compose a new rhythm to enhance a piece of music. If children have practice of thinking creatively, it will come naturally to them now and in their future career.
2. Confidence - Theater training gives children practice stepping out of their comfort zone and allows them to make mistakes and learn from them in rehearsal. This process gives children the confidence to perform in front of large audiences.
3. Problem Solving - Artistic creations are born through the solving of problems. How do I turn this clay into a sculpture? How do I portray a particular emotion through dance? How will my character react in this situation? Without even realizing it kids that participate in the arts are consistently being challenged to solve problems. All this practice problem solving develops children's skills in reasoning and understanding.
4. Focus - The ability to focus is a key skill developed through ensemble work. Keeping a balance between listening and contributing involves a great deal of concentration and focus. It requires each participant to not only think about their role, but how their role contributes to the big picture of what is being created.
5. Non-Verbal Communication - Through experiences in theater and dance education, children learn to breakdown the mechanics of body language. They experience different ways of moving and how those movements communicate different emotions. They are then coached in performance skills to ensure they are portraying their character effectively to the audience.
6. Receiving Constructive Feedback - Receiving constructive feedback about a performance or visual art piece is a regular part of any arts instruction. Each arts discipline has built in parameters to ensure that critique is a valuable experience and greatly contributes to the success of the final piece.
7. Collaboration - Most arts disciplines are collaborative in nature. Through the arts, children practice working together, sharing responsibility, and compromising with others to accomplish a common goal. When a child has a part to play in a music ensemble, or a theater

or dance production, they begin to understand that their contribution is necessary for the success of the group. Through these experiences children gain confidence and start to learn that their contributions have value even if they don't have the biggest role.

8. Accountability - When children practice creating something collaboratively they get used to the idea that their actions affect other people. Through the arts, children also learn that it is important to admit that you made a mistake and take responsibility for it.

3.6.4 Examples of Art Forms

Dance

1. Students who have difficulty in expressing themselves through writing & drawing may show amazing results when expressing themselves through dance.
2. With appropriate props, they may find it easier to show rhythmic movements with music. Props like pompoms, ribbons, long scarves etc.
3. Children can be supported by a prompter, who could be a teacher or a peer, hidden in the wings. Children with disability can imitate him /her if needed.
4. Visual cues can be put on the stage by drawing lines, foot-prints or arrows, then an individual can dance without any person's help.
5. Dance can be choreographed in such a way that children can participate. Example hand movements for wheelchair users, visuals cues for those with autism & hearing impairment.

Drama

1. Some children can have difficulty memorizing scripts they can be helped with visual cues. Those with visual impairment can have Brail scripts or learn scripts by listening to recorded scripts.
2. Children with hearing impairment may do mimes very well.
3. Children with Autism, ADHD may need social stories and visual schedules to help them perform.
4. Like dance Drama scripts can be adapted to different children can participate.

Music Singing

Musical instrument can be adapted for those with motor impairments. And for those who want to sing they may need visual cues to remind them of word and timing.
Some adapted musical instruments are as follows:

Art and Craft

CwSN will need to explore and experiment with different material and medium. They may use brushes and pencils but also other materials that may be unusual. Those children who find it difficult to use conventional materials can be offered unconventional materials to use. These materials can be piece of sponge to paint, brush that is used for painting walls, or using fingers . Children may also choose to do things such as printing, sculpture, photography rather than pencil sketch or painting with paint. Some children may need more time to understand and follow direction. Sometimes children are helped if they see a demonstration.

Some CwSN have a unique way of expressing themselves through art and they should have the opportunity to do so. That means giving them access to different materials and to understand their unique perspective.

3.7 Unified Events, Outdoor Activities and Work Education

In all schools there are large unifying events and children with disabilities need to be included in them. These events can be large sporting events, concerts, exhibitions etc. These events are often outside the school premises, and teachers have to find ways of supporting and accommodating children with disabilities.

To enable children with disabilities to participate in these events the most important part is planning.

- Any event that is planned outside the school premises means some prior information is required for the whole class.
- Informing all the children about availability about toilets, drinking water and what they should be aware of so they may stay safe.
- Children with disabilities may need to know who will be their “go to” person. That is if they have any difficulties there will be a person assigned, either a member of staff or senior student, who will answer their question.

3.7.1 Concerts and Sports Day :

Concerts and sports day take up a lot of time in practice and very often children have to wait their turn to practice. Some children feel lost without their regular class routine. There may be difficulties for some student in waiting. The class should be informed before time the date of the event and when practice will start. It is a very good idea to mark the dates on the calendar so that the children are prepared. For those children who find it difficult to deal with unstructured time it is a good idea to do a social story, and provide some actives they can do

while waiting. Activities like coloring, looking at picture books etc.
For outdoor activities some children with communication difficulties may not ask for water or tell anyone they feel unwell in sun. To avoid any difficult situation teachers need to make sure they have access to water, toilet and have some protection from the sun. The assigned "go to person" need to check and ask if any child with communication difficulties requires something.

3.7.2 Excursions:

Excursions are something all children look forward to. Teachers need to make sure there is accessibility that is ramps, accessible toilets if not available then how can the children be helped. For some children the sudden change in school routine is difficult to understand. As mentioned before the dates of the excursion needs to be marked on the calendar. A social story of how they are to travel and where they are going will help.

During outside excursions teachers shout out instructions and information. Some children with disabilities will not focus on what the teachers is saying because they are in a new place and are coping with the lack of structure of the place. Therefore giving the children worksheet that they can complete while on excursion will give the visit more structure and make it meaningful. Children could also be given a list of things to see or do where the children just have tick off the list. Some children will benefit if they have nurotypical partner who can guide them during the excursion. Information can also be recorded to be used during the excursion for children who require it.

3.7.3 Work Education :

Work Education is taught as it develops skills that are outside the academic area, it teaches the values of manual work, children learn about health and nutrition and it allows children to learn the various ways they may serve society. Work education ,in a very simple way gives the experience of working. Therefore it is good experience to have. Children with disability can be part of this with some careful thought as to the choice of activities and what adaptation may be required.

Much of what children learn in work education is about developing non academic skills. But an important part of work education is developing an understanding of serving society and this applies to children with disability. All the children including children with disability can prepare cards for Diwali or New Year for people staying in old age home or orphanages. Children can collect or make simple toys to donate to an organization working with children. They need to know that they can to do social work. They and reach out and do something for someone in society that needs help.

3.7.4 Examples of Outdoor Games for Special Children

There are plenty of other fun opportunities your child may enjoy.

1. Swings can be so much fun for any child. It's a great relaxing activity that can bring some calmness outdoors.
2. If CwSN loves to color, then bring it outdoors with chalk. It may get a little messy so it is a good idea to put your child in some old clothes or lay out a small towel your child can sit on. Chalk can be hard to grasp or break easily, but buying large chalk can solve that problem.

3. Nature walks can provide great sensory. Have child collect rocks, leaves, and flowers that interest them during the walk. Look and listen to the birds, watch the chipmunks and squirrels. You can even pull child in a stroller if that makes the walk easier. Just make sure to really talk about the scenery to get the full effect.
4. Bikes create great opportunities to get outside and get some exercise. They can be challenging at first, but keep encouraging child.
5. A sandbox is like a large sensory bin. You can make castles, mud pies, roads for cars, etc. It's a great place to let the imagination run wild and may be a great way to get outside.
6. Have a picnic! Your child can help make and pack the food. Spread a blanket out in the backyard and enjoy the sunshine. It can be a fun way to break out of the normal routine and get some fresh air.
7. Hey! It's a quiet time. You can create a little quiet space outside in the shade. Grab a blanket, pillows, and whatever else to get comfortable. Bring and read some books.

3.8 Summary

- Inclusive education means access to all aspects of school life academics and co-curricular.
- There are various kinds of supports and strategies that help all children to participate.
- Using visuals help all children to understand what is expected of them.
- Preparing children before hand with social stories or even a description of what they are to do during the activity and afterward will reduce anxiety and enable the student to participate.
- Children with disability can participate in sports if rules and equipment's are modified.
- Children with disability participate in Assembly, recess and all non academic activities when accommodations are made to support participation.
- Sometimes teachers need to think out of the box and be willing to tryout unconventional methods to enable all children to participate.
- For large events teachers need to plan ahead for successful inclusion of all children.
- Not all co-curricular activities need be competitive. Teachers can reduce competiveness element by choosing appropriate activities.
- Co-curricular activities develops qualities in children with disabilities that classroom teaching cannot.

3.9 Experiential Learning

1] Design a simple team game using a ball that all children will participate in. The game should make the following concepts clear to the children. a] Game rules – Court boundary , method of scoring , the job of each team member has b]Playing in group c] Concept of leadership d]Winning /Loosing and e] Concept of discipline
2] List down the ten fun activities for children with autism
3] Plan an excursion for Pre-school children of inclusive set up.
4] Make a weekly morning assembly time table.
5] Write two social stories that you can narrate during morning assembly.

3.10 Check Your Progress

1. How does co-curricular activities enhance Social Skill and improve emotional development?

2. List the areas of modification that can be made in team games that will enable the games to be more inclusive.
3. What can a child with disability gain by participating in co-curricular activities that may not be possible by doing academics?
4. What support would you provide a student with visual impairment to participate in a school drama?
5. How can child with poor fine motor and hand eye coordination participate in a Art class.
6. How can you enable a student with Autism to participate during Assembly Time?
7. Name one area where you would use a "buddy system" or "circle fiends" to support children with disability.
8. How is 'Visual Supports' used to teach different Co-curricular activities?
9. What kind of sports would recommend for child who finds it difficult to play in a team.
10. How would you help a child with communication difficulties participate in a school excursion?

3.11 Unit End Assignment

Your standard IV class has 35 student of those 4 students disabilities. That is Junaid who has High Functioning Autism , Tina who has hearing impairment , Sourav who has intellectual disability and Rima who is wheel chair bound. Describe in details how you will plan the following:

A) School Excursion to the local Zoo.
B) A school Assembly which you class will conduct. Your class has to do the assembly on the theme of Earth day. It will include a speech , A short drama and a colorful poster.
C) An Art Class

3.12 Assignment for Self-Evaluation

Think of different adaptations and support required in co-curricular activities for 4 different disabilities.

3.12 References

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Unit 4: Teaching Practices: Elementary and Secondary Level

4.1 Objectives

After going through this unit, you will be able to understand the methods and techniques of:

- teaching language
- teaching science
- teaching mathematics
- teaching of social science and EVS
- teaching of co-scholastic domains

4.2 Introduction

Inclusive education means that all students attend and are welcomed by their neighbourhood schools in age-appropriate, regular classes and are supported to learn, contribute and participate in all aspects of the life of the school. Inclusive teaching strategies refer to any number of teaching approaches that address the needs of students with a variety of backgrounds, learning styles, and abilities. These strategies contribute to an overall inclusive learning environment, in which students feel equally valued.

With the growing focus to address the needs of all students, including those with disabilities, inclusion is a component of school restructuring agendas (McGregor & Vogelsbert, 1998). The inclusion model has become the current education classroom standard. Consequently all teachers have a need be trained and prepared for the inclusion of special needs students in the general education population. Teachers must be prepared in the instructional setting to adapt instruction for an individual by changing one or more aspects of the material being taught such as:

a) *The method by which the instruction is delivered to the student.*
b) *The amount of content material to be covered*
c) *The evaluation method or criteria*
d) *The level of assistance provided in the learning situation*
e) *The learning environment: and/or*
f) *The instructional materials that are used by the student. (Beninghof & Singer, 1995)*

Teaching is primarily a process, which includes planning, implementation, evaluation and revision. Good teaching practice is a key influence on student learning - a desired outcome and primary goal of higher educational institutions. Teachers strive to meet the principles of good practice in an effort to provide the best learning experience for their students. Key considerations in shaping good teaching practice includes a] Encouraging good communication between teachers and learners b] Encouraging interaction among learners c] understanding different methods and techniques of teaching subjects d] Providing opportunities for active participation e] Timely and appropriate response and feedback f] Emphasizing time on task g] Motivating learning by communicating expectations h] Respecting diverse talents and ways of learning.

Most elementary school programs do not offer specialization areas. Rather, students are expected to learn all subjects. However, secondary school education programs allow students to major in the area they intend to teach, such as mathematics, physics, history, and language. In this unit, we will discuss the different strategies, methods and techniques of teaching language, science, mathematics, social studies and co-scholastic activities.

4.3 Teaching Language

Some children may have specific difficulties in learning languages and may require help in improving their areas of weakness and in devising strategies to overcome their difficulties in linguistics. There may be some children who may require alternative communication systems to compensate for the difficulties they face in using spoken language. As an educator, one should know the principles, methods and techniques of teaching language. This information will give educator a sound theoretical base for teaching children. Language teaching is the main concern of all the educators. Various researchers have given suggestions for the educators so that better language development can be ensured.

4.3.1 Principles of Teaching Language

Paul and Quigley (1984) has listed a number of principles of teaching language:

a) Use of multi-sensory channel
b) Useful language should be taught to the children
c) Meaningful situation and context should be used
d) Language should be considered as a means to an end rather than an end by itself
e) Language learning must begin very early
f) Child's needs and interest should be kept in mind
g) The goal of language program should be automatic development
h) Language is considered truly acquired when the child uses it spontaneously
i) Language acquisition is a continuous process and not simply a product of the classroom

4.3.2 Methods of Teaching Language

A] **Structural Method:** The Structural Approach is based on the assumption that language can be learnt best through a scientific selection and grading of structures or patterns of sentences and vocabulary. The stress is on the learning of essential structures of language. The Structural method of teaching language is based on the belief that in the learning of language, mastery of structures is more important than the acquisition of vocabulary.
The Objectives of the Structural Method:

1. To lay the foundation of language by establishing through drill and repetition about graded structures.
2. To enable the children to attain mastery over an essential vocabulary of words for active use.
3. To correlate the teaching of grammar and composition with the reading lessons.
4. To teach the four fundamental skills, namely understanding, speaking, reading and writing in the order named.
5. To lay proper emphasis on the aural-oral approach, active methods and the condemnation of formal grammar for its own sake.

B] **Natural Method**: Krashen and Terrell, (1983) developed the "Natural Approach" in the early eighties, based theories about second language acquisition. This acquisition-focused approach sees communicative competence progressing through three stages:(a) Aural comprehension,(b) Early speech production, and (c) Speech activities, all fostering "natural" language acquisition, much as a child would learn his/her native tongue.
The Natural Method is based on the following five principles:

1. The aim of the *Natural Approach* is to foster the communicative competence, not grammatical perfection.
2. At the beginning of class, the emphasis is on listening: The teacher presents the students with a variety of easy to understand material (input). The production of speech, as a response to listening, is developed over several stages:
    a) a nonverbal answer
    b) a one-word answer
    c) a two or three-word answer
    d) a short-sentence answer
    e) a compound-structured answer
3. At the beginning of the process of acquiring the language, the students speak without grammatical correctness. Slowly, because of additional reception and production, their ability to communicate verbally enhances.
4. Activities that enhance the process of language acquisition are the main part of the class (input): The main focus is not on grammatical exercises. The amount depends on both the age and receptiveness of the students.

C] Combined Method: The aspects of both structural and natural methods are combined in the 'Combined Method'.
The Rhode Island curriculum: Blackwell et al. (1978) designed it for his students at the Rhode Island School for the Deaf. This approach is primarily structural and is based on the assumptions of Chomsky's transformational generative grammar theory. The programme begins by introducing the students to the 5 basic (Kernel) sentence patterns.
There are three levels.

a) The first level is designed for children in preschool and kindergarten. The stress is on planning and conducting activity for exposure, recognition, comprehension, production, and writing of the linguistic principles.
b) In the second level, the focus is on teaching – learning the use of simple sentences.
c) In the third level the focus is on teaching- learning the use of complex sentences. The principle behind it is that language is never to be taught in isolation.

Test of Syntactic Abilities Syntax Program (TSA): Quigley and Power (1979) developed this programme. The programme is intended to help teachers to assist children in acquiring sentence structures. The 'Teachers Guides' provide basic information on syntactic

development and a variety of games and other activities for developing syntactic structures in natural situations. Workbooks provide intensive exposure to particular syntactic aspects of language in more structured situations.

Maternal Reflective Method (MRM): Uden (1977) advocated the MRM for the language development of children with hearing impairment. After closely observing a normal mother child interaction, he noticed that the mother:

a) 'seizes' what the child wants to say,
b) Plays a double role by saying what the child wants to express and gives the reply herself.

Van Uden, hence suggested that the same technique of mother child interaction could be used by special teachers in the classroom situations. The teachers should play the role of mother in the class and develop language in the child/children with hearing impairment.

Teacher Assessment of Grammatical Structure (TAGS): Following are the features of this method:

a) Use of syntactically appropriate utterances,
b) Contriving situations wherein the children are exposed to various combinations of words,
c) Encouragement to use the various word combination learnt by imitation,
d) Four major stages followed in this are: Comprehension, Imitated production , Prompted production and Spontaneous Production.

Pause and think , " what is the difference between technique an method?"
Technique means a systematic procedure, formula, or a routine by which a task is accomplished. On the other hand, method is defined as a habitual, logical, or prescribed practice or systematic process of achieving certain end results with accuracy and efficiency, usually in a preordained sequence of steps.

4.3.3 Techniques of Developing Language

There are many techniques of teaching language like News, Conversation, Directed Activities, stories, Visits, Role Plays, Picture Description, and Poem etc. In this unit, we will discuss few techniques of teaching language.

A] Conversation:
Imagine a Mother conversing with her baby and try to incorporate the same as an educator: Communication starts the moment baby is born. When a mother cuddles her baby, she is letting her baby know that, "*I love you. I will keep you safe and warm*." The process of learning language starts within healthy relationships in early infancy. Babies and parents make special connections through their own unique ways of communicating.

You might be thinking "what is so special about all of this? Isn't this what mothers do with any baby?"
You are right. Communication with baby with communication disorders will start in much the same way as it does with any baby. The message you want to communicate with your face, voice and body is, "we love you…let's have some fun together."

As an educator, you can follow some simple guidelines:

A] Watch closely: Observe child's mood? Try to get into a rhythm that matches his/her mood. If the child fusses, you can respond with a sympathetic face and soothing voices. If he/she smiles, use an animated face and voice in response.
B] Encourage the child to look at your face and listen to you: child will be interested in looking at you if you use various facial expressions and play social games that build anticipation. Vary your vocal inflections (like we normally do in baby talk) to encourage the child to begin to listen to your voice.
C] Enjoy with child: Get involved in the conversation with the child and enjoy with the child.
Follow the **two R's** of early communication:

1. Recognise baby's signals. Ask yourselves: "What is baby trying to say with his or her eyes, face, body or voice?"
2. Respond to these signals as communication. Remind yourselves, "Talk about baby's idea."

B] Story: Children love stories, they make interesting images in the minds when listening to a story. Teaching by story-telling is one of the best method of teaching, the teacher can employ in any lesson presentation. A good story teller should have qualities that are abilities to use gestures, facial expressions, make use of the language that suits the cognitive level of the learners and to use appropriate aids, like pictures, audio-visual to motivate pupils. Moreover the story teller's appearance should not attract more attention than the story being told. The story teller must speak fluently, using a clear voice tone and the expressions must be changed spontaneously to suits the moods of the story. It is necessary for the teacher to be observant of learners' reactions so as to take necessary measures. Story telling has more benefits as an effective method of instruction, because it involves many mediums of communication for example use of gestures, song and dance.

Think of a story.

It doesn't have to be complicated. It could even be an event or activity in your student's life, such as visiting relatives. Divide the story into four or five parts. Then draw the different parts of the story onto a piece of card and divide the different sections with lines.

C] Directed Activity: There are a variety of activities that the educators can direct. These activities can be as simple as threading beads, making greeting card, wearing shoe, making different shapes, painting, cutting fruits even activities of bathing, washing, polishing shoes to some complex activities like making kite, making fruit salad, making ice cream, covering books, decorating the classroom can also be transformed into a directed activity which can be used as language learning situation.

When you go shopping, make a small list of items for your student to get at the shops. Stick a picture next to the word to help them make the connection between the object and its name. You can make the activity more complicated in different ways such as writing the items and asking your child to draw pictures to go with it, or by giving them the picture and asking them to write the word.

Like any other activity, Directed Activity can also be deconstructed into steps:
1. Determine what task you want the student to perform
2. Figure out what steps will be required to complete the task.

3. Teach the student step by step (sequence). Decide what order to teach the steps in.
4. As each part of the process is learned, add it to the sequence until the task can be completed independently.

D] Poem: Poetry can increase students' literacy and linguistic awareness. Studying poetry can help students to expand their oral and written vocabularies. Reading and writing poetry also helps students to become more aware of the ways in which language can be used and the rhythms, images and meanings that can be created.

Teacher should inculcate the following points while teaching poem:

a. Intonation patterns: it is the variation in the pitch of the speaker's voice used to give information or change of meaning.
b. There are three basic pitches in any language. These are normal, high and low. The normal pitch is where the voice usually is. High is where the voice rises to indicate information focus. Low is where the voice falls, usually at the end of sentence.
c. Stress: some syllables are stronger than other syllables and called stress. When we put emphases on a word or sentence it becomes a stress word or a stressed sentence.

4.4 Teaching Science

"Good science education is true to the child, true to life and true to science."

Having an understanding of the science portions in the curriculum greatly increases students' understanding of how the world works. At the primary stage, the child should be engaged in joyfully exploring the world around her and making attempts to harmonize with it. The objectives of teaching Science at this stage are:

a) Primarily to nurture the child's inherent curiosity about the world around her (natural environment, artifacts and people),
b) To have the child engage in exploratory and hands on activities to acquire basic cognitive and psychomotor skills through observation, classification, inference, etc.;
c) To emphasize design and fabrication, estimation and measurement as a prelude to development of technological and quantitative skills of later stages; and
d) To develop the basic language skills: speaking, reading and writing not only for science but also through science.

- *National Curricular Framework 2005 (NCERT)*

4.4.1 Some Techniques for Teaching Science in Inclusive Classrooms: The methods of teaching science in the general classrooms can also be applied in 'inclusive classrooms' with appropriate adaptations and use of techniques like a] Scaffolding and b] Differentiation.

A] Scaffolding: Scaffolding technique is used to bridge learning gaps—i.e., the difference between what students actually know and what they are expected to know. One of the main goals of scaffolding is to reduce the negative emotions and self-perceptions that students may experience when they get frustrated, intimidated, or discouraged when attempting a difficult task without the assistance, direction, or understanding they need to complete it.

The following examples will serve to illustrate a few common scaffolding strategies:

- The teacher gives students a simplified version of a lesson, assignment, or reading, and then gradually increases the complexity, difficulty, or sophistication over time.

- The teacher describes or illustrates a concept, problem, or process in multiple ways (e.g., visually, orally, kinesthetically, etc.) to ensure understanding.
  (Source: http://edglossary.org/scaffolding/)

B] Differentiation: ***(please read Block 3 sub unit 2.3)***

4.4.2 Suggested Methodologies of Teaching Science:

1] Lecture cum Demonstration

a) In Lecture cum Demonstration method, the teacher performs an experiment in the class and goes on explaining what she does. The students see the actual apparatus and operation; even help the teacher in demonstrating.
b) In inclusive classrooms, use of simple and clear instructions along with multi-sensory approach to teaching is beneficial.
c) For students with visual impairment, there must be access to the apparatus and peer support (if needed). For students with hearing impairment, there should be provision of advance notes, preferential seating and interpretation in sign language.

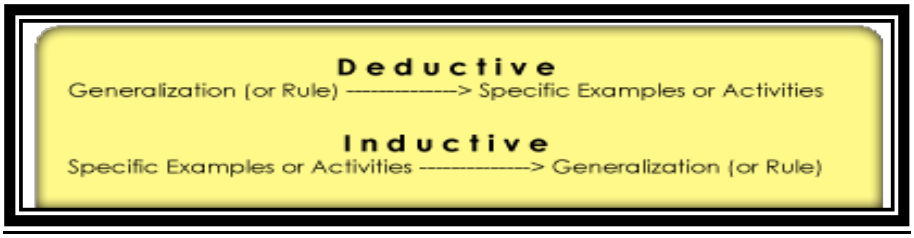
2] Heuristic Method or Discovery Method

a) Derived from a Greek word "heurisco" meaning "I find out". In this method, the student finds out things for themselves. Children are treated as discoverers, instead of being told the facts, they are led to find out facts. It aims to develop scientific attitude and spirit of enquiry.
b) There is no "spoon-feeding". It is a method of "learning by doing". In this method, a problem is put in front of students and they are asked to solve it on their own. For this, essential facilities, equipment and guidance is provided by teacher.
c) Students are allowed to openly discuss. The class atmosphere should be free and encouraging. The teacher should be as curious as the child.
d) Also, teacher would have to apply scaffolding techniques to move students with varied capabilities towards stronger understanding and, ultimately, greater independence in the learning process.

3] Project Method

a) It is a student-centric method of teaching. Very little is taught from text-book, the focus is on experiential learning.
b) Students direct their own learning by their individual interests.
c) Project means an activity requiring planning, thought and action. It can be either 'Individual Project' or a 'Group Project'.
d) Use differentiation technique and give options as per the student's abilities and interests. E.g. For the topic – 'Constellations', following could be project options:
    - Creating tactile models for prominent constellations. (Using cardboard and LEDs / toothpicks and clay / cardboard and buttons etc.)

4] Inductive – Deductive



a) An inductive instruction is a much more student-centered approach and makes use of a strategy known as 'noticing'. Instead of explaining a given concept and following this explanation with examples, the teacher presents students with many examples showing how the concept is used. The intent is for students to "notice", by way of the examples, how the concept works.
b) Conversely, a deductive approach to instruction is a more teacher-centered approach. This means that the teacher gives the students a new concept, explains it, and then has the students practice using the concept.

5] Analytic – Synthetic

a) Analytic Instruction is that form of teaching which proceeds from whole to parts. Thus, if I take a watch and separate it into its parts, and teach the name and function of each part as I take it to pieces, the process is analytic. So in grammar, if we begin with the sentence and separate it into its parts, it is called an analytic process. If in geography we begin with the globe as a whole, and separate it into land and water, and come down from continents and oceans to the smaller divisions, the process is analytic.
b) Synthetic Instruction is that form of instruction which proceeds from parts to whole. Thus, if we take the parts of a watch as separated, and putting them together, teach the name and use of each part, we are teaching synthetically. If in grammar we begin with the words as parts of speech, and put them together to form sentences, we are teaching by the synthetic method. So if we begin with the geography of the school grounds, go out to that of the township, the county, and the state, and thus at last cover the entire surface of the earth, the method is synthetic.

4.4.3 General Strategies to Teach Science Effectively In an Inclusive Classroom

The first step should be to make the child curious and build interest in the subject. Ask probing questions such as*: What is the Sun made up of? Why are we on Earth and not on other planets?* It doesn't matter if the answers are not correct, encourage divergent thinking and open discussions while starting or closing a topic.

Concept Development is the most important aspect while teaching Science; language goal should be secondary. E.g. Look at the following definitions of reproduction:

a. Reproduction: the process by which plants and animals give rise to offspring and which fundamentally consists of the segregation of a portion of the parental body by a sexual or an asexual process and its subsequent growth and differentiation into a new individual.
b. Reproduction: making a copy of oneself (e.g. through baby, egg, seed etc.)

It is always better to use a simple definition to introduce the concept.
Similarly, complicated scientific terms could be broken down and explained.
E.g. Photosynthesis = Photo (light) + synthesis (to make) i.e. green leaves making their own food in presence of sunlight.

Activity A: Simplify the definitions of any ten scientific terms of your choice.

a. Try to build curiosity and interest in the subject by direct experience. E.g. Visit to a nearby dam to understand how it produces electricity.

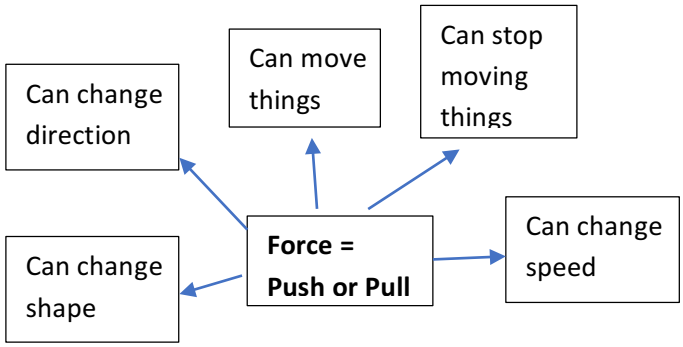
Activity B: Make a list of five topics that can be taught by direct experience.

b.Introduce one concept at a time and connect it with the related concepts.

E.g. Topic: Sun, Earth and Moon

- *Start with an activity with two students, one as 'Sun' and other as 'Earth'. Show how 'Earth' revolves around 'Sun'.*
- *Tell the time taken for one revolution i.e. 1 year.*
- *Introduce the concept of 'Rotation' and show how 'Earth' rotates while revolving around the 'Sun'.*
- *Tell the time taken for one rotation i.e. 1 day.*
- *Introduce 'Moon' (third student) revolving around 'Earth'.*

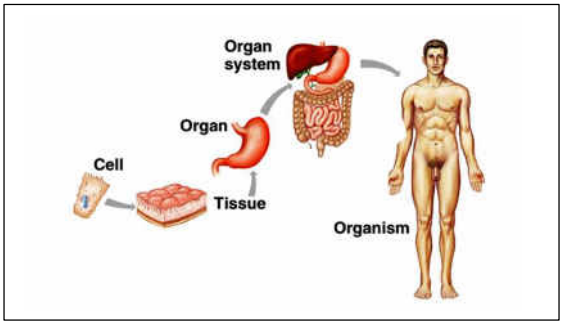
1. Use relevant and real life examples to explain the concept. *E.g. use an example of **Pumpkin** and **Pea** to explain the size difference between Sun and Earth. If Pumpkin = Sun, then Pea = Earth.*
2. Always proceed from 'Concrete to Abstract' and 'Whole to Part'.
   E.g. Real plant → Picture of a complete plant with labels → Separate parts of plants
3. Link the concepts using a mind-map.



Activity C: Create Mind Maps for any five topics of your choice.

4. Simplify long paragraphs into simple diagrams, tables, lists etc. whenever possible. E.g.

In most of the multicellular organisms cells are organized into tissues, tissues into organs, organs into organ systems and organ systems ultimately making up the living body. Simply, a tissue is the collection of similar cells performing a common function.



5. Highlight the important words and sentences from the text-book.

E.g. Cellular Organization
All living things are well-organized structures. They are made up of one or more highly organized components called cells. A cell is the structural and functional unit of a living thing. Organism made up of only one cell are called unicellular organisms, while those organisms made up of many cells are called multicellular organisms.

6. Use 3-D models of correct relative size as far as possible. E.g. model of 'Earth' can't be bigger than that of the 'Sun'.
7. For the students with visual impairment, it's a good practice to maintain a scrap-book where the science diagrams are made tactile/concrete and labeled in Braille.
8. Raised line drawings are often used in creating tactile science diagrams. They can be made on heavy-weight paper, plastic, or thin metal sheets, but require special devices to make them. You must be careful when using raised line drawings, however; this is one type of adaptation that is very prone to miscommunicating information. (e.g. Phases of Moon).
9. Use of Visual Aids e.g. Blackboard Diagrams, Pictures, Cartoons, Charts, Science Videos is highly recommended for all students especially for those with Autism, Hearing Impairment, Intellectual Impairment and Learning Disability.
10. Use of Sign Language is very effective in explaining scientific concepts to deaf students.
11. Use peer support strategies, especially in project and laboratory related work.
12. Allow flexibility in how students demonstrate their knowledge and development.
13. Correlate the topics in Science with those of other subjects, relevant news item, stories, biographies and movies for reinforced learning.
14. Organize games, quizzes, science fairs and call people passionate about science to deliver talks or workshops to develop genuine interest in the subject.

4.5 Teaching Mathematics

"The universe cannot be read until we have learned the language in which it is written. It is written in mathematical language, and the letters are triangles, circles & other geometrical figures, without which it is humanly impossible to comprehend a single word"

- *Galileo Galilei*

There are many ways of thinking, and the kind of thinking one learns in mathematics is an ability to handle abstractions, and an approach to problem solving. And hence it is imperative to ensure all students have access to quality mathematics education which takes place in a situation where:
(1) Children learn to enjoy mathematics,
(2) Children learn important mathematics,
(3) Mathematics is a part of children's life experience which they talk about,
(4) Children pose and solve meaningful problems,
(5) Children use abstractions to perceive relationships and structure,
(6) Children understand the basic structure of mathematics and
(7) Teachers expect to engage every child in class.

- *National Curricular Framework 2005 (NCERT)*

4.5.1 Techniques used in Inclusive Classrooms: Scaffolding and Differentiation (please read sub unit 4.4)

4.5.2 Suggested Methodologies of Teaching Mathematics: (please read sub unit 4.4)

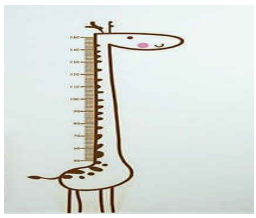
4.5.3 General Strategies to teach Maths effectively in an Inclusive Classroom

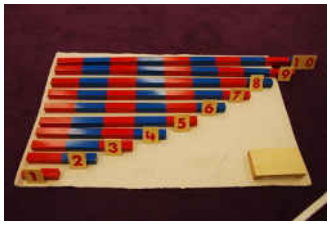
A] Functional Mathematics: Functional math skills are those skills that a student needs in order to live independently in the community, to care for themselves and to make choices about their lives. This includes Number recognition and concepts, Time concept, Money concept, Measurement, Use of calculator etc. Understanding of Functional Mathematics concepts should be a priority for all students especially for students with intellectual impairment, autism and certain learning disabilities.

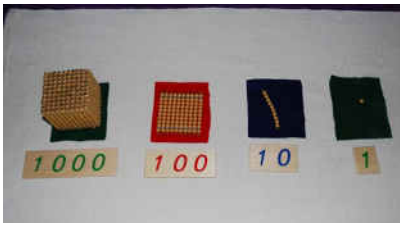
1. *Role Play/Visits:* The classroom can be used as a market, with students playing the role of shopkeepers and customers with actual things and real money (if possible). Use of calculator may be allowed for students with intellectual impairment. We can use a weighing scale for reinforcing measurement concepts. Additional learnings would include checking for the MRP, net weight, date of manufacture and date of expiry etc. on the packaged items. The same can be done outside the classroom by visiting nearby shops or market.

2. *Use of environment as teaching aid:* Use innovative strategies like using the wall markings to check students' heights, use the stairs to reinforce number concepts, use the door to explain angle concepts etc. to make mathematics fun and concrete.

3. *Use of Montessori Materials:* Learning mathematical concepts in a Montessori classroom begins concretely and progresses towards the abstract. They are developed from simple to complex. Process is taught first and facts come later. Order, coordination, concentration, and independence are experienced by the child using these materials.







4. *Three-dimensional Aids:* The three-dimensional aids would give concrete experiences to all students including the visually impaired child in understanding a specific concept. E.g. Area, volume, height, weight, elevation, scale value, etc., are some concepts which can be effectively explained through three dimensional teaching aids.

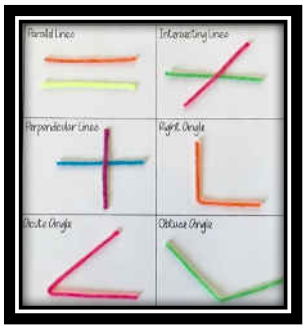
The following principles are very important for the selection of three-dimensional teaching

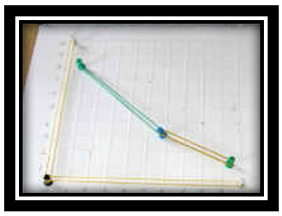
aids:

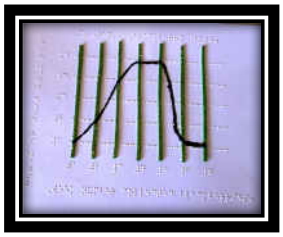
i. The three-dimensional teaching aid should be handy. It should not be too big to explore or too small to understand the minute differences.
ii. It should be strong and sturdy so as to withstand the manipulation of the visually impaired child.
iii. As far as possible, sharp edges should be avoided in three-dimensional aids for visually impaired children. Sharp edges may be made blunt to avoid injuries to the Braille reading fingers.
iv. If the teaching aids are of collapsible type, understanding will be better. For example concepts like hemisphere, diameter, circumference, radius, etc., can also be explained when the globe is of collapsible type.

The main purpose of the three dimensional aids is to make the children understand the two dimensional interpretations of them at a later stage. The teacher should check at every stage that the children acquire this skill effectively.

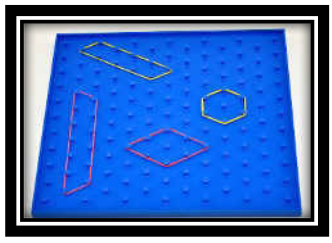
5. *Embossing:* Embossing is often used to make mathematics, especially geometry or graphs accessible to the blind students. We can use of tactile materials like wool, flexible wires etc. and raised line drawings to present concepts.





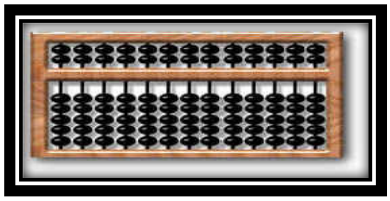


6. *Geo-Board:* The geo-board is a multi-purpose board. This can be used for showing geometrical figures and graphs. It is a peg board, square or rectangular in shape with nails at equal distance, both lengthwise and width wise.



This geo-board is a wonderful companion to the teacher of visually impaired children, especially in the teaching of mathematical concepts. Rubber bands can be used to show various shapes. When the distance between the nails is smaller, even circles can be shown.

7. *Use of Abacus:* Abacus is a simple instrument for performing rapid arithmetical calculations. Basic mathematical operations like addition, subtraction, multiplication and division are solved by simple movement of beads in this instrument. It is especially useful for students with visual impairment.

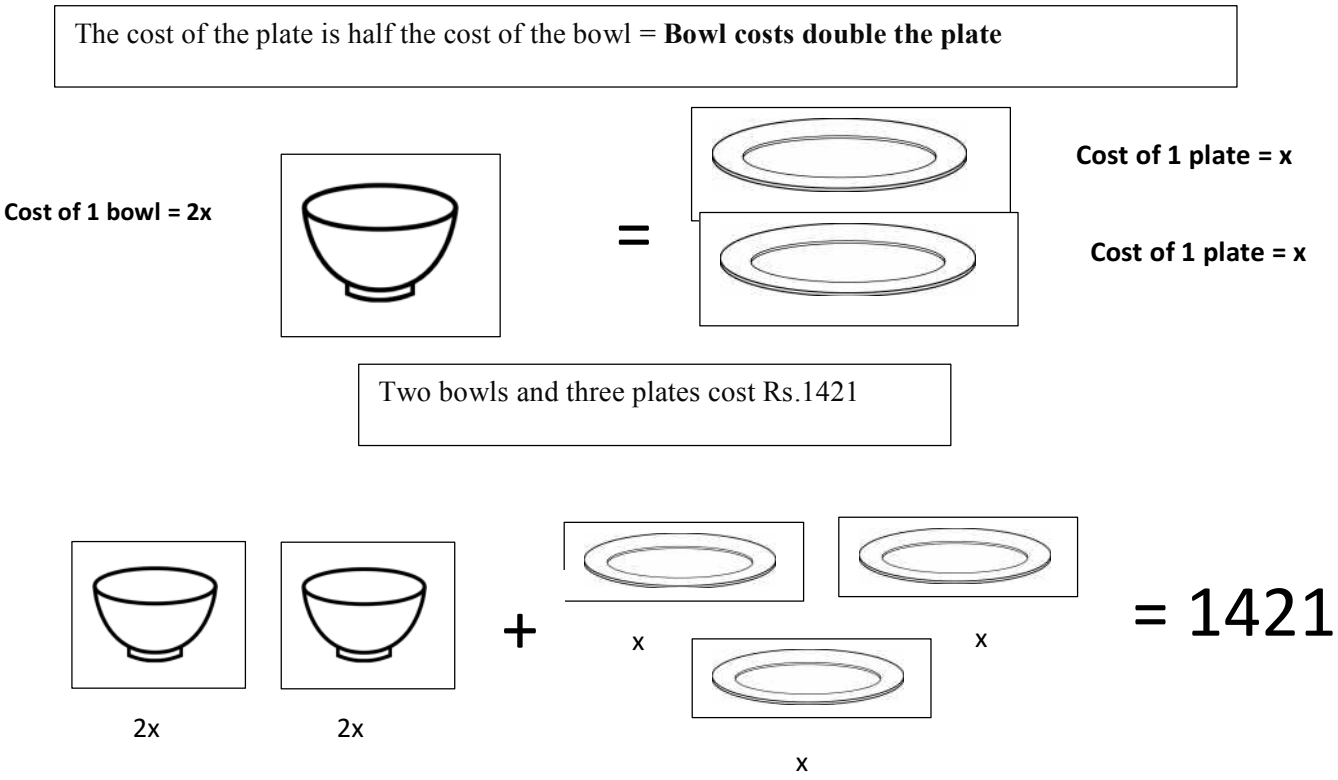


8. *Mental Mathematics and Use of Vedic Maths:* Prolonged training and practice in performing mental calculations help children to acquire the mathematical mind which is very essential for problem solving, analysis of information, scientific approach in performing the day-to-day activities. Vedic Maths proves especially beneficial in simplifying calculations and making mathematics fun.

9. T*aylor Frame and Nemeth Code:* Students with visual impairment will benefit from learning Nemeth code i.e. Mathematical Braille Code and use of Taylor Frame for solving algebra and higher order mathematics.

10. *Collaborative Strategic Reading for Word Problems:* This includes simplifying information from the word problems in mathematical language.

    E.g. Two bowls and three plates cost Rs.1421. The cost of the plate is half the cost of the bowl. What is the cost of the bowl?



11. Use of Sign Language is very effective in explaining concepts to deaf students.
12. Use peer support strategies, group discussions and brainstorming sessions for problem solving.
13. Allow flexibility in how students demonstrate their knowledge and development.
14. Correlate the topics in Mathematics with those of other subjects, stories, biographies, movies, videos etc. for reinforced learning.
15. Organize mathematics puzzle games and quizzes and call people passionate about mathematics to deliver talks or workshops to develop genuine interest in the subject. If possible, people with disabilities working should be invited to share their stories and passion for the subject.

4.6 Teaching of Social Science and EVS

Before we discuss basic concepts of social studies let us clarify that social sciences and social studies are not synonymous to each other. Social sciences include history, geography , political science, economics, anthropology and sociology which represent man's fundamental needs; the human record , habitat , political structure, subsistence, human derivation and

social organization. Human or culture geography and psychology account for human needs of acceptance and personal adjustment. Social sciences may also include social biology, ethics, philosophy, jurisprudence, statistics, linguistics and education and even rhetoric, logic and grammar.

Social studies embraces all the social sciences and draws its subject matter from them. Subject matter from all the social sciences like history, geography, economics and civics , which may help in the development of social skills, attitudes and behavior patterns is drawn.

4.6.1 Formulating Instructional Objectives

While formulating instructional objectives one must understand and follow the basic principles:

1. An objective should be conceived and stated in terms of pupils behavior

Table # 1 : Terms used in writing Objective

Objective	Associated Action Verb	Objective in Behavioral Terms
Knowledge	Write, state, recall , recognize	The student will be able to define the term…
Comprehension	Classify, interpret, explain, formulate	The student will be able to explain…..
Application	Compute, demonstrate, assess, predict	The student will be able to illustrate the concept of …….
Analysis	Analyze, differentiate, justify, identify	The student will be able to analyze the…….
Synthesis	Summarize, relate, organize, generalize	The student will be able to discuss the …..
Evaluation	Determine, criticize, verify	The student will be able to compare the …..

2. Objectives should be worked out at the right level of generality so as to be neither so vague nor so specific. Objectives should be stated non compositely so as to avoid confusion, repetition and contradictions.
3. Worthwhileness of objectives should be carefully judged from various points of view, particularly their social acceptability.

4.6.2 Methods of Teaching

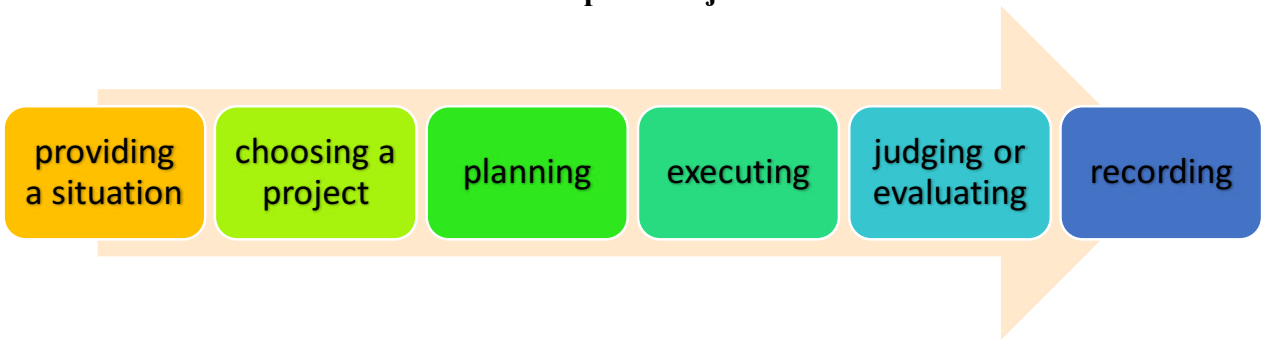
Methods of teaching play a vital role in achieving the aims and objectives of teaching a particular subject or topic. The selection of teaching method depends upon the nature of the subject and the topic to be taught. There are many methods of teaching but we will discuss only few of them, which as per the need of the topics of social studies to be taught in various classes are useful.

Project Method: The project method is a modern contribution to educational theory and practice. According to W H Kilpatrick, “A whole hearted purposeful activity, proceeding in a social environment”. The curriculum, content and techniques of teaching are considered from

the child's points of view. Thus "learning by living" is a better description of the project method than "learning by doing". Collin has advocated five types of projects

a. Exploration projects
b. Construction projects
c. Communication projects
d. Play projects
e. Skill projects

Flow Chart # 1 :Steps in Project Method



Examples of Projects in Social Studies: these may include field trips, making cardboard, preparing scripts, schools elections, arranging community survey, scrapbook etc.

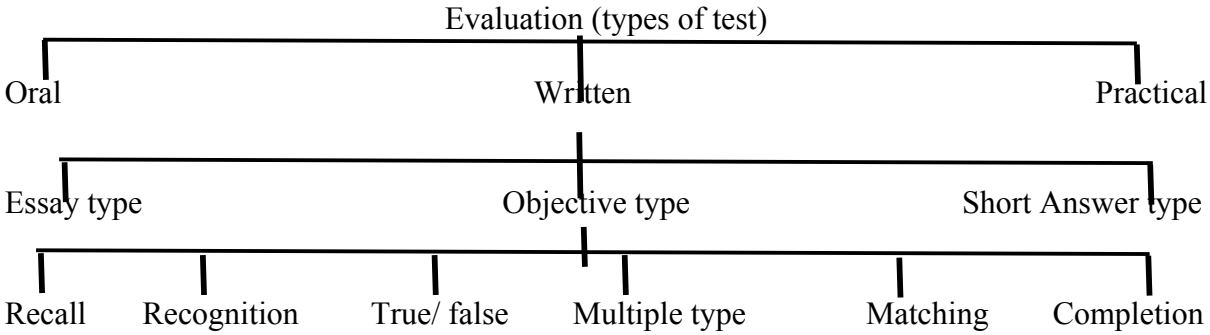
Story telling method: Story telling is one of the most important methods of teaching social studies (*please read sub unit 4.3.3).* The art of storytelling can be cultivated by a] observing skillful narrators b] studying the work of successful story writers c] practicing story telling d] critically evaluating one's own performance and bringing about necessary changes.

Dramatization Method: Dramatization has been described as "a synthetic art" involving the purposiveness co-ordination and control of the delicate organs of speech and muscles of the body combined with a sense of rhythm with a view to free and intelligent expression of emotions and ideas. Principles of selection of play

a. Plays chosen should depict the evils of the social customs
b. A play should have literary value
c. The students should be able to understand and appreciate the play
d. It should also have entertainment value
e. It should be free from objectionable subject matter
f. There should be no vulgarity in the play.

Inductive and Deductive Method: Inductive method is a method in which general rules and principles are derived at by observing and analyzing the specific facts and events. It should be remembered that teaching maxims like "from known to unknown", from "particular to general" and from "concrete to abstract". Deductive method is reverse of inductive method. In deductive method facts are deduced by the application of established formulae or experimentation. Here the approach is confirmatory and not explanatory. For effective teaching of social studies both the technique should be employed. It is because inductive method is for establishing principles or deriving generalizations whereas the deductive method is a method of applying the deduced results. No one is complete without another.

4.6.3 Evaluation is Social studies:



There are different areas which can be evaluated through different devices.

Evaluation of knowledge and information	**Evaluation of skill**	**Evaluation of attitudes, interests and values**
Oral test, essay type, objective test, class work etc	Daily work, work done in laboratory, assignment, homework etc	Anecdotal records, daily diary, checklist, observations, rating scales etc

Once you pinpoint the reason for conducting evaluation and the target area, you can better determine the most appropriate type of evaluation. This section describes the major types of evaluations.

Since evaluation is an integral part of the educative process, the teacher should guide every learning experience in relation to the needs and interest of the learners. Evaluation forms the basis for deciding what type of appraisal is needed to assess a particular learning situation.

Diagnostic evaluation: This is the type of evaluation the teacher considers at the beginning of the unit or course to determine the different levels in terms of learning experience of children to serve as basis for grouping them - slow, average or fast. Diagnostic evaluation will also enable the teacher to ascertain or analyze the nature or cause of difficulties, and, in effect, help them to plan remedial activities to meet their interests and needs.

Formative evaluation: This type of evaluation the teacher performs the learning activities to find out how well he is doing and what is needed during the next learning experience by the learners. This is important to give the learners adequate information for self-appraisal. This is one way of motivating them. Information from formative evaluations is not used to make decisions or judgments about the learners' work; but rather used on matters as learner's grouping, preparation of lesson plans and execution of teaching strategy.

Summative evaluation: Under this type, the teacher undertakes the evaluation of the learning outcomes of a unit in order to grade the learners and make his own personal judgment on the effectiveness of his methods of teaching. This evaluation process serves as a basis for deciding whether promotion or retention will be better for the learner. Besides, it can also serve as a guide in determining the effectiveness of instruction and be a gage for planning

future learning activities. Summative evaluations are those used by the teacher to determine grades and form the reports sent to the students and their parents.

Evaluating instructional outcomes is necessary to maintain the prescribed performance standard of the learners, serves as guide in determining on-going experiences and when to introduce new ones; to appraise the teacher's performance; effectiveness of teaching methodology; availability and suitability of textbook and other printed learning materials; and to identify and measure special abilities of learners.

CCE: Please refer to unit no 5 of Block 3

4.7 Teaching of Co-Scholastic Domains

All work and no play makes Jack a dull boy, this is popular saying which we use more often. If this true for children with non-disabilities, it is the same for children with special needs. When we speak of children with special needs, we tend to think more about how to develop skills in communication, language, speech, activities of daily living, orientation and mobility and may forget that they too need leisure time. Activities that may help them spend their free time enjoyably are taught as co-curricular activities in school.

Through co-curricular activities, children are given the opportunity to become more independent, have fun, enjoy new experiences, and make new friends. Through tactile and sensory activities they learn best through "doing" and "feeling" activities. Also, some special needs children have challenges with their sensory skills and may have unusual habits when it comes to touch. These activities develop your child's sensory skills, while making them more comfortable with touching different textures. Another important skill that improves through these activities is language development and improvement. Outdoor activities and Excursions help children gain confidence, become more independent, or improve proficiency in certain areas. Activities like dance and art help in creative expression of emotions. Also it helps in making the child physically fit and mentally more alert.

The meaning of co-curricular activities revolves around its different feature and characteristics. For the overall development of a child, curriculum is not only the single criteria. The holistic growth as well as to develop the various facets of personality development of children; classroom teaching should be supplemented with co-curricular activities. These out of class activities affect all domains of life such as cognitive (intellectual), emotional, social, moral, cultural and aesthetic. Co-curricular activities meaning are more focused upon cognitive aspects thereby help in intellectual development. Competitiveness, excellence, quality achievements, creativeness and enthusiasm are few of the ethics of extra-curricular activities and also strengthen the meaning of co-curricular activities in school. Co-curricular Activity plays vital role in shaping the life of a person, especially the students. Co-curricular activities help in the development of mind and personality.

Following activities will make the lives of children with special needs more meaningful. Judicious use of these will also help in developing concepts and skills that would contribute to their wholesome development.

Play: children with normal hearing sensitivity develop through playing, learning and practicing new skills to develop variety of understanding. They repeat actions which have

interesting results and gradually learn to plan an action to achieve a particular end. They learn to imitate and to use more and more objects. With the help of verbal and non-verbal encouragement from those close to them and their natural inner motivation to please others, children learn essential fine motor skills to play incidentally.

Children with special needs do not pick these skills incidentally. It means these children will need to be directly shown how to attend to objects in prepared environments to acquire play skills. They may be unwilling or unable to explore their environment and interact with other people through sight, hearing or touch. For inculcating the above skills , the child will need to develop the following initial skills i] awareness that there is a world beyond their bodies ii] ability to focus and attend to people and objects iii] motivation to interact with objects iv] ability to grasp , manipulate , reach out and reiterate.

Yoga: the whole system of yoga is built on three main structures: exercise, breathing and meditation. In yoga, the body is looked upon as the primary instrument that enables us to work and evolve in the world. Hence the exercises of yoga are devised to put pressure on the glandular systems of the body thereby increasing their efficiency and total health. Just as all children can benefit from yogasanas, children with special needs too can derive many benefits form learning to do yoga. While introducing yoga to these children, we have to bear in mind the following aspects: i] to help children co-ordinate the activities of mind and body ii] to reduce the distracted state of mind and help the mind to dwell on the present activity iii] to actively increase the ability to concentrate on the present activity .

Fitness activities: Regular physical activity benefits both physical and psychological health and reduces risk of heart disease, diabetics, high blood pressure, obesity and stress related illness.

***Music*:** Music mean a great deal in the lives of most people. Music can bring people together, making music together, listening to music, moving to it, dancing, all of these create harmony. Music enables children with special needs to detect sound to aid better understanding, better speaking and better language acquisition. To experience rhythm, to express themselves in dance and movement, to develop an appreciation, improve social behavior, deepen their emotional experience and creativity, promote spatial experience.

Field trips: Field trips are of great value to children with special needs as they increase opportunities for orientation and mobility, socialization and community awareness. Trips in local trains and riding in the public transport buses can a good experience for children. Often one thinks that only places of historical interest are the tight places for children however going to the barber, beauty parlor , sank bar, fish market, post office teaches children with special needs a lot more than any child would learn sitting in class and from text book.

Gardening: Gardening is an excellent form of recreation and leisure for everyone, much more for children with special needs. It helps in the following ways: i] gives persona satisfaction ii] provides outdoor activity iii] relieves stress iv] is a form of exercise v] develops creativity vi] increases attention span vii] develops self-confidence vii] builds routine.

Role of Co-curricular Activity in Student:

To realize the all-round development of student, curricula should be amalgamated with co-curricular or extra-curricular activities. Co-curricular activities help in realization of aims and

objectives of education. In the practical life, the students able to express their ideas freely due to active participation in debate and extempore. Discussion also helps in generating ideas and inculcating values. Games and Sports make them mentally and physically fit and sound. Games make them learn how to perform while losing or wining an event. Sometimes, classroom teaching becomes monotonous and routine. Here, co-curricular activities can bring pleasant and joyous experiences. Thus, co-curricular activity has many advantages in student's life of school, college and university.

Importance of Co-curricular Activity:

a) Extracurricular activity helps to accomplish the objectives of education through free expression, debates, co-operation, coordination, etc.
b) Develop the habits of constructive competition, bring efficiency in ideas, improves skill and competence.
c) Bring pleasant changes and develop joyous experiences.
d) It makes one responsible for family and society.
e) Develop the capacity of organizing events and enable for managerial and leadership activities.
f) These activities create avenues to meet with various people thereby helps in socialization, self-identification and self-assessment.
g) Activities like field trips, tours and excursion helps to know about other people, their work, culture and customs.
h) Develop the ability of decision making.
i) Develop the sense of belongingness

4.8 Summary

- The subject taught in the schools have their own identity, importance & educational values. The educational value of a subject is established by goals / aims & objectives. The aims or long term goals can be regarded as expression of strategy while objectives are specific, immediate and attainable goals, specific to one subject, precise and clearly defined, objectives are more directly concerned with what specifically is being attempted over a relatively short period
- Language teaching involves approaches that lead to methods, methods that are broken down into procedures, and procedures that are a collection of techniques. Understanding how these concepts interrelate can help a teacher know the reasons behind their choices in how they choose to teach.
- Methods are long term strategies of teaching whereas techniques are specific short term strategies adapted for a particular session to achieve the short term goals regarding the development. There are three methods of teaching language a] structural method b] natural method and c] combined method.
- Social studies provides situations in which school children may use related learnings in a functional and natural setting for the application and use of knowledge and basic skills in solving human problems. Thus, it may be used as a means of integrating various school activities and experiences.
- Since, there will be a variety of proficiency levels in the classroom, be sure to have different levels of textbooks and other teaching materials available for each subject. Having a range of levels on hand will ensure that each student can learn at the appropriate level. This minimizes frustration and maximizes confidence and forward momentum in the student.

- Lecture-cum-discussion method is best suited for all lords of students. The basic purpose of this method is to disseminate and encourage them to take part in the discussion. However, teacher has to see that all students are given equal chance or else this will miss its charm.
- In laboratory method, the student controls and observed the changes under investigation. Students learn by actual activity students learn many virtues through laboratory activity.
- Observation method encourages students to develop a keen power of observation and acquire knowledge. This aims at training students mind to store suitable experiences for reasoning and establish facts observation of nature develops a sense of satisfaction and develops awareness towards protection of nature.
- Project method has certain steps to be followed by students. This method in based on philosophy of pragmatism. The sense *practicalism* develops an attitude to undertake the activity and complete it scientifically.
- Problem solving method develop skill of finding solutions to the problem on their own. The students thinking on problem and their understanding of the science behind anything helps them to solve problems of their life objectivity. Students live in the real world and like to deal with concrete things.
- Co-scholastic activities complement what students are learning in school and support intellectual, emotional, social, moral, creative and physical development.

4.9 Experiential Learning

1. Prepare a short story for Primary level through computer assisted technology.
2. Conduct a small survey to find out the practices regarding documentation of language assessment by five Educators.
3. Make a list of advantages of Co-curricular Activity
4. Examples of Co-curricular Activities in Primary School
5. Make a list of five games (Pre School level) in the area, a] mathematical readiness and b] science readiness

4.10 Check Your Progress

1. Enumerate the different techniques of teaching language to the children with special needs.
2. What aspects of language you will assess in a 10 year child with developmental disorders?
3. Discuss one technique of teaching social science with suitable examples.
4. Make a list of teaching learning materials for teaching school subjects.
5. Discuss the role of teacher in project method.
6. List down the various advantages of self - learning material.
7. Explain various co-scholastic activities that complement students learning in school.
8. Explain with suitable examples how you will adapt TLM for children with special needs.
9. List down the various objectives of teaching science.
10. Discuss the different types of evaluation.

4.11 Unit End Assignment

1. List out the aims and objective of different techniques of language teaching to the children with special children.
2. Explain any two methods of teaching science with suitable examples.

3. Differentiate between 'formative evaluation' and 'summative evaluation'

4.12 Assignment for Self-Evaluation

1. Explain in detail with suitable examples, the various maxims of teaching social science.

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Unit 5: Alternative Methods of Evaluation

5.1 Objectives

After reading this unit, you will be able to:

- Elaborate on the concept of Continuous and Comprehensive Evaluation
- Enumerate the possibilities of adaptation of CCE parameters and procedures
- Identify the appropriate tools and techniques of evaluation
- Describe the need and importance of various alternative methods to evaluation
- Establish the existing provision and exemptions for educational evaluation
- Portray the future possibilities for educational evaluation provisions towards a more robust inclusive education

5.1 Introduction

Evaluation is an indispensable part of the educational process. Every educational programme should aim for the holistic development of the learner. Therefore, the learning experiences provided in the school should not just contribute toward the achievement of the desired goals; but also, while selecting those learning experiences we must consider both scholastic and co-scholastic outcomes as desirable behavioral outcomes.

One of the main purposes of evaluation at the school is to help the learner improve her/his achievement in scholastic areas and to develop life-skills and attitudes with reference to the larger context of life. An understanding of learners, educational aims, the nature of knowledge, and the nature of the school as a social space can help us arrive at principles to guide classroom practices. And, evaluation should be viewed as a component of curriculum with the twin purpose of effective delivery and further improvement in the teaching learning process.

In this unit, we understand the concept of continuous and comprehensive evaluation as an integral part built into the teaching learning process; that leads to diagnosis, remediation and enhancement of learning. Further, we also discuss about evaluation through alternate methods, along with the traditional techniques and tools of evaluation to suit the needs of students with special needs. Towards the end of the unit we cover the existing provisions and exemptions for student evaluation; along with future possibilities for further boosting of inclusive education.

5.3 Concept of CCE

Education is considered as a process for all-round development of a child in all dimensions, i.e intellectual, physical, social, moral, ethical, emotional etc. A holistic approach to education facilitates

total development by providing the right learning environment where the child builds self-concept, self-image, sense of enterprise, sportsmanship etc.

Holistic development includes development of cognitive, affective and psychomotor abilities. To ensure holistic development one has to adopt the approach of holistic assessment. The conventional evaluation system has been giving more stress on evaluating student's abilities in scholastic areas; whereas the behavioural outcomes in co-scholastic areas receive less importance. This hinders the achievement of the objective of holistic development of learners. Continuous Comprehensive evaluation is being, of late, emphasized to achieve the objective of holistic development of learners at school.

Continuous and Comprehensive Evaluation (CCE) refers to a system of school-based evaluation that covers overall aspects of student development. The objectives selected for evaluation are in continuity to assess learning and behavioral outcomes of each. The term 'continuous' means that evaluation of identified aspects of students 'growth and development' is a continuous process rather than an event, built into the total teaching-learning process and spread over the entire span of academic session. It also means regularity of assessment, frequency of unit testing, diagnosis of learning gaps, use of corrective measures, retesting and feedback of evidence to teachers and students for their self-evaluation.

The term 'comprehensive' implies that it attempts to cover both the scholastic and the co-scholastic aspects of the student's growth and development. Since abilities, attitudes and aptitudes can manifest themselves in forms other than the written word, the term 'comprehensive' also refers to application of variety of tools and techniques that aim to assess a learner's development in different areas of learning, like: Knowledge, Understanding, Applying, Analyzing, Evaluating and Creating.

Continuous evaluation helps in bringing awareness of the achievement to the child, teachers and parents from time to time. They can look into the probable cause of the fall in achievement (if any), and may take remedial measures of instruction in which more emphasis is required. Following are some of the advantages of using CCE:

- Teachers can use varieties of evaluation methods over and above the written tests.
- Teachers evaluate students on day-to-day basis and use the feedback for improvement in teaching-learning process.
- Students can be assessed in both scholastic and co-scholastic areas.
- Evaluation is done throughout the year and can provide more reliable evidence of student's progress.
- It encourages students in forming good study-habits.
- The feedback provided by CCE can be effectively used in remedial teaching.

5.3.1 Features of CCE

CCE attempts to shift the emphasis from testing to holistic learning; following are some of the features of continuous and comprehensive evaluation:

(a) The '*continuous*' aspect of CCE takes care of *'continual*' and '*periodicity*' aspect of evaluation.
(b) Continual means assessment of students is done at the beginning of instructions (placement evaluation), followed by assessment during the instructional process (formative evaluation); done informally using multiple techniques of evaluation.
(c) Periodicity means assessment of performance done frequently at the end of unit/term (summative).
(d) The '*comprehensive*' component of CCE takes care of assessment of all-round

development of the child's personality. It includes assessment in Scholastic as well as Co-Scholastic aspects of the pupil's growth.

(e) Scholastic aspects include curricular areas or subject specific areas, whereas co-scholastic aspects include Life Skills, Co-Curricular, attitudes, and values.

(f) Assessment in scholastic areas is done informally and formally using multiple techniques of evaluation continually and periodically. The diagnostic evaluation takes place at the end of unit/term test. The causes of poor performance in some units are diagnosed using diagnostic tests. These are followed up with appropriate interventions followed by retesting.

(g) Assessment in Co-Scholastic areas is done using multiple techniques on the basis of identified criteria, while assessment in Life Skills is done on the basis of Indicators of Assessment and checklists.

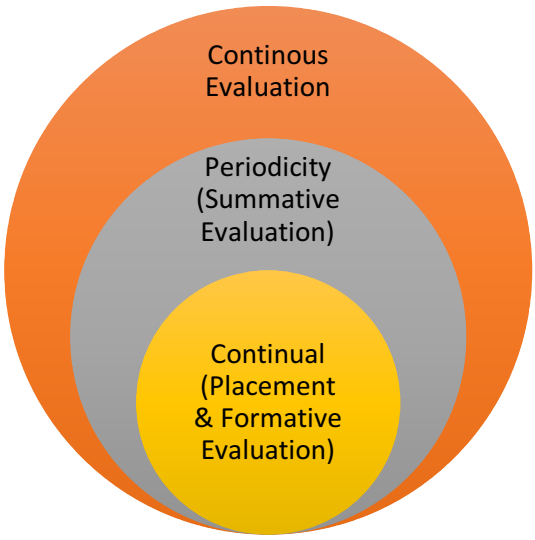

Figure A: Aspects of Continuous Assessment

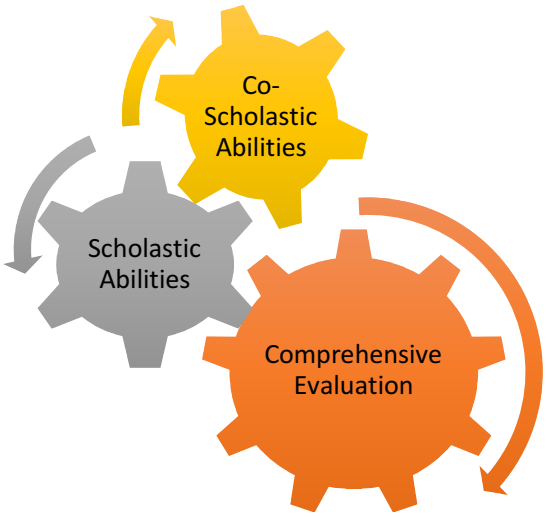

Figure B: Aspects of Comprehensive Evaluation

5.3.2 Objectives of CCE

The main aim of CCE is assessing the learner's development in the different areas of learning; with primary objectives:

- To develop cognitive, psychomotor and affective skills
- To make evaluation an integral part of teaching-learning process
- To determine social utility, desirability or effectiveness of a program and take appropriate decisions about the learner, the process of learning and the learning environment
- To help organize effective teaching strategies
- To ascertain individual strengths, weaknesses and needs (scholastic and co-scholastic areas)
- To identify areas of aptitude and interests
- To emphasize on thought-process and de-emphasize memorization
- To make the process of teaching and learning, a learner-centered activity

5.3.3 Nature of CCE

The nature of CCE is so comprehensive that it includes almost all aspects of child development. It integrates assessment with teaching and learning process; emphasizing the assessment of learner abilities in scholastic and co-scholastic areas:

- It emphasizes that teacher's judgements should be made through an honest and objective appraisal without bias.
- It also encourages continuous interaction with parents with regard to their wards progress and performance.
- It is developmental in nature as it emphasizes the improvement of learning throughout the schooling process
- It is a process of continuous attempts to assess whether desirable changes are taking place towards achievement of educational objectives.

5.3.4 Advantages of CCE

CCE attempts to minimize the fear and anxiety among learners about examination and evaluation. It emphasizes evaluation as a process instead of an event; and helps learners, parents and teachers in following ways:

- Reduces stress and anxiety
- Reduces dropout rate
- Places greater focus on learning rather than conducting examinations
- Contributes to holistic development of learners
- Prepares learners for future life, by making them physically fit, mentally alert, emotionally balanced and socially adjusted.
- Gives opportunity to learners to develop interest, hobbies and personalities.
- Promotes learner friendly environment, and optimizes learning.
- Equips students with life-skills, especially creative and critical thinking skills, social skills and coping skills which help them face a competitive environment.

Since, we have already learnt about the assessment of Scholastic and Co-Scholastic domains in the Block 1 Unit 3; we will limit our discussion about CCE to this.

5.4 Adapting CCE

CCE helps in improving student's performance by identifying her/his learning difficulties at regular time intervals right from the beginning of the academic session and employing suitable remedial measures for enhancing their learning performance. The scheme of CCE has inbuilt flexibility for schools to plan their own academic schedules as per specified guidelines; however, still one must consider making requisite adaptations/modifications in the curriculum for fair evaluation of students with special needs in an inclusive classroom.

There are nine areas of modifications/adaptations that may be considered for the CCE parameters during assessment of students with special needs, based on their abilities and level of functioning:

1) *Quantity*: Adapt the number of items to learn or the number of activities to be completed. For example, one may consider to:
    a. Reduce or limit the number of questions
    b. Reduce the length of the assignments
    c. Reduce the number of concepts to be introduced at any given time
    d. Have the student learn 2-3 concepts from each chapter etc.

2) *Time*: Adapt the time allotted and allowed for learning, task completion or testing. For

example:

a. Create a timeline for completing a task
b. Allow student to take the assignment home
c. Allow extra time in class to complete assignments
d. Allow additional time to complete tests
e. Give short breaks during tests/exams etc.

3) *Level of Support*: Increase the amount of personal assistance to keep the student on task or to reinforce/prompt use of specific skills. For example:
   a. Read test questions
   b. Allow peer tutor/ buddy system
   c. Setting up the activity beforehand for the student
   d. Check for comprehension of question etc.

4) *Input*: Adapt the way instruction is delivered to the learner. For example:
   a. Permit use of Visual Aids
   b. Provide concrete objects for use
   c. Provide hands-on activities
   d. Arrange Cooperative Groups etc.

5) *Difficulty*: Adapt the skill level, problem type or the rules on how the student may approach the work. For example:
   a. Permit use of Calculator for math problems
   b. Simplify task directions/instructions
   c. Give alternate tests or permit open-book tests
   d. Focus on mastery of more functional math concepts
   e. Grade the spelling separately from the content of the answers etc.

6) *Output*: Allow the variety on how the student can respond to instructions. For example:
   a. Verbal vs. Written response
   b. Communication book
   c. Allow students to show knowledge with hands-on material
   d. Permit use of Computer to type instead of writing etc.

7) *Participation*: You may adapt the extent to which a learner is actively involved in the task. For example:
   a. Listen to a taped story while others are engaging in reading aloud
   b. Permit use of color map instead of labeling the map
   c. Task to cut and paste pictures of concepts presented while others write an essay about the concept
   d. Permit use of computer based presentation instead of participating in debate etc.

8) *Alternate Goals*: Adapt the goals or outcomes while using the same material. For example:
   a. In a social studies lesson, while others learn to locate each state and name the capital; you may adapt the goal of a student to be able to match/identify the map/flag of the country.

b. In mathematics, while other learn to calculate volumes in geometry, you may adapt the and limit the goal for a student to identification of different shapes etc.

9) *Substitute Curriculum*: One may also consider preparing a Functional curriculum for the students with special needs; where we provide different instruction and material to meet the learner's individual goals. For example:
   a. Replacing a subject with training on use of communication device
   b. Permitting community based instruction and evaluation
   c. Including skills from Extended Core Curriculum like Functional Academics, Orientation and Mobility, Social Interaction skills, independent living skills, Recreation and Leisure skills, Career Education, Assistive Technology, Sensory Efficiency skills, Self-Determination etc.

Apart from the adaptations, following are different accommodations that may be considered for a child with special needs. Accommodation is the "leveling the playing field" for students by changing 'how' they work through general education curriculum. If the child's disability is preventing her/him to access the grade level content; then the child may need accommodations as per age, disability, classroom placement etc. When choosing appropriate accommodation for the student, we must make sure that we are not over-accommodating and creating a learned helplessness in the student. There are several different types of accommodation, like:

a) *Accommodations in Presentation*: These may be considered for students with hearing, visual or learning disabilities. They change how the student receives information:
   - Oral reading (audio tape, JAWS, adult, peer etc)
   - Large Print
   - Magnification devices
   - Sign Language
   - Braille
   - Tactile Graphics
   - Manipulatives
   - Audio amplification devices (hearing aids, FM system etc)

b) *Accommodations in Response*: For students with visual or hearing impairments, physical disabilities and organizational problems; these accommodations offer different ways for students to respond, for example:
   - Using a computer/typewriter or a scribe to record answers
   - Using an Augmentative communication device or other assistive technology
   - Using a Brailler
   - Responding directly in the test booklet rather than on an answer sheet
   - Using organizational devices, including calculation devices, spelling and grammar assistive devices, visual organizers or graphic organizers.

c) *Accommodations in Setting*: The settings refers to the place where a test is taken or the way in which an environment is set up. For students who are easily distracted, following accommodations in the setting/environment may be considered:
   - Administering the test individually
   - Testing in separate room
   - Testing in a small group

- Adjusting the lighting
- Preferential seating
- Providing noise-buffers such as headphones, earphones or earplugs.

d) *Accommodations in Timing/Scheduling*: For students who may need more time to process information, help managing the time, or may need breaks throughout the class or test; these accommodations in timings/scheduling offer flexibility, for example:
   - Extended time on assignment or tests
   - Multiple or frequent breaks during tests
   - Checklists for procedures or routine
   - Predictable routines and procedures
   - Timelines of assigned tasks
   - Planners – pictorial, visual or written
   - Change in testing schedule or class schedule
   - Testing over multiple days etc

Teachers who use principles of Universal Design of Learning have greater options to help meet the instructional needs of children including those who need accommodations. Many times, the right accommodations are all a student needs to be able to access grade level curriculum and be successful in general education classroom. The child's accommodations should be evaluated from time to time to see and offer appropriate and required amount of support.

CCE can be incorporated in the inclusive classroom while engaging students by teaching through a variety of activities. Incorporating strategies for attending to diverse needs in in classroom are particularly helpful in developing CCE processes for the classroom. NCERT's CCE guidelines, in its publication; offers indicators of assessment/evaluation as follows; any of these or their combination can be utilized to develop a plan for CCE for scholastic and co-scholastic aspects of a child in an inclusive classroom:

1. *Observation and Recording*: Reporting, narrating and drawing, picture-reading, making pictures, tables and maps etc.
2. *Discussion*: Listening, talking, expressing opinions, finding out from others etc.
3. *Expression*: Drawing, body movements, creating writing, sculpting etc
4. *Explanation*: Reasoning, making logical connections etc
5. *Classification*: Categorizing, grouping, contrasting and comparing etc
6. *Questioning*: Expressing curiosity, critical thinking, developing questions etc
7. *Analysis*: Predicting, making hypotheses and inferences etc
8. *Experimentation*: Improvising, making things and doing experiments etc
9. *Concern for Justice and Equality:* Sensitivity toward disadvantaged or differently-abled, showing concern for the environment etc.
10. *Cooperation*

While planning for CCE, it is good to remember that assessment/evaluation occurs throughout the teaching of a lesson; that allows us to recognize and plan steps in teaching of the topic. Also remember, that in a mixed ability group one must always encourage varied responses and give clear instructions. Allowing flexibility in choosing answers, for instance, recognition and identification rather than recall, coloring the correct answer, cut-and-paste, matching, pointing odd-one-out etc; may help facilitate in attaining a true score of evaluation. Moreover, evaluation may be carried out individually or in small groups; to help evaluate a child's overall development.

5.5 Evaluating through Alternative Methods

Schools are responsible for ensuring that students of all ability levels are engaged in a curriculum and receive the instruction and support they need to succeed. Alternate assessments based on the same content and alternate achievement standards are both increasingly used to improve instruction and to include all students in the general learning environment.

Alternative assessment is a blanket term that covers any number of alternatives to standardized tests. While the traditional paper and pencil tests may be effective to assess some of the skills; they are not sufficient to assess the productive skills. Alternate assessments are tailored for testing students who are unable to take the regular assessment, even when testing accommodations are provided. The characteristics of alternative methods of evaluation may include:

- It is usually teacher-generated
- Takes into account the individual background and need of every unique learner
- Is flexible, responsive and continually developing according to curricular objectives
- Takes into consideration different learning styles and preferences
- Allows learners to demonstrate content knowledge and skill mastery without language barrier difficulties
- Highly effective for students who are entitled to accommodations & modifications
- It is normally documented with qualitative data such as performance descriptors, comparisons with previous work and skill demonstration

Authentic assessment and Performance-based assessment are forms of alternative assessment; that are alternative to traditional testing. Authentic assessment integrates the assessment of traditional academic content with the knowledge and skills important to lifelong learning using a variety of "real world" situations. Performance based assessment requires students to construct a response, create a product or demonstrate application of knowledge; and requires development of a tool and scoring rubrics.

Following is the rationale for employing alternative assessments; and some reasons for incorporating alternative assessment in classroom:

- To capture complex outcomes like creative thinking, problem solving, summarizing, synthesizing and reflecting.
- To address realistic tasks of everyday meaningful contexts.
- To include good instructional tools by adapting instruction as per feedback.
- To meet the student's different learning styles, as it offers a broad spectrum of assessment possibilities.
- To collaborate and interact with students.

Many of the evaluation procedures provide learning experiences that help integrate student's classroom knowledge into real-life experiences. Apart from the pen-and-paper and other traditional evaluation; students may be evaluated in one or all of the following methods:

5.5.1 Visuals

In the context of an evaluation of learning, visual data is the image-based data like photographs, paintings, models, maps, diagrams, drawings, film etc generated in the context of learning being evaluated. This data may either be:

a) material produced by students in learning context as part of their normal learning activity; *or*

b) material generated specifically for the purpose of evaluation to capture information about the learning context and those involved in it.

Visual methods are extremely useful in participatory evaluation as the students become immersed in the evaluation process. Filming or photographing learning activities and/or the interaction of students with each other and learning environment is one of the visual methods for evaluation. Here, the video cameras are placed discretely so they are least intrusive.

Students filming or photographing their own activities and interactions in the learning environment as a means providing insight into their perspective is another way of using visual method for evaluation. Other common methods of using visual method for evaluation are students drawing or modeling a representation of how they perceive their learning context by using painting, models, maps diagrams, drawings etc. These images can also be used to stimulate discussions with students through focus groups.

The visual methods particularly help during evaluation of students when other methods are not particularly accessible to them. For example, students having difficulty in verbal or written communication may be able to record their performance for evaluation through visual methods.

5.5.2 ICT

Information and Communication Technology (ICT) has not only changed the instructional system but also the examination and evaluation system. In the recent years, several innovative initiatives have taken place in the field of educational evaluation. Online and on-demand examination makes the evaluation system more learner center as it can be conducted when the learner is ready, rather than at the convenience of the system.

The tools and resources of ICT include all modern-day inventions in the field of internet, software and hardware tools used to communicate through satellites, computers, mobile phones, tablets, smart-boards, projectors, laptops and similar devices; and also, the old day tools like telephone, television and radio. The objective of school education system is to assess the academic performance of students. ICT helps students to get instantaneous feedback about the status of her/his understanding; and also allows flexibility to teachers for customization of evaluation activity and procedure as per the relevance, ease, abilities and limitations of the learner.

At present the paper-pencil tests are conducted for evaluating the academic performance of students. These tests are conducted in group settings; which are evaluated by the teacher who may not be able to provide immediate feedback to each and every student; and use of ICT in evaluation can help us bride this delay. As a teacher, we must plan on how we will employ ICT in the evaluation process, which may include:

- Implementing evaluation alternatives that are logically integrated with both the instruction plan and the technology implementation
- Systematically monitoring and providing feedback to student learning using evaluation strategies based on the use of technology tools
- Evaluating the relevance and effectiveness of the implemented technology application, making timely decisions for improving the instruction process
- Implementing self-evaluation processes reflecting on one's own beliefs and pedagogical practices regarding technology integration in the classroom.

5.5.3 Observation

Observation provides the opportunity to document activities, behavior and physical aspects without having to depend upon people's willingness and ability to respond to questions. It can be used to secure benchmark and descriptive data during curriculum transaction and to document activities, processes and outcomes.

Observation means 'perceiving the behavior as it is" and can be defined as "Measurements without instruments." It is an indirect approach to study the mental processes of others through observing their external behavior. For example: if someone frowns, howls, grinds teeth, closes fists, we would say that the person is angry by only observing these external signs of his behavior. Following are the steps required for using observation for the purpose of evaluation:

Step 1: Observation of behavior- The first step involved in the method of observation is directly perceiving or observing the behavior of individuals. For example, if we want to observe the social behavior of children we can observe it during assembly and play.

Step 2: Recording the behavior observed- The observation should be carefully and immediately noted and recorded. Minimum time should be allowed to pass between happening and recording, as that will make the observation more objective.

Step 3: Analysis and Interpretation of behavior- When the notes of behavior observed are completed, they are analyzed objectively and scientifically in order to interpret the behavior patterns.

Step 4: Generalization and Planning for Intervention- On the basis of analysis and interpretation of the data collected with the help of observation method, it is possible to identify certain patterns for generalization; planning may then be done for intervention for remediation.

Types of Observation: For the purpose of evaluation, observation can be classified into following types:

- *Natural Observation:* Here, we observe the specific behavioral characteristics of children in natural setting. They do not become conscious of the fact that their behavior is being observed by someone.
- *Participant – Observation:* Here, the observer becomes the part of the group, which she/he wants to observe. It discloses the minute and hidden facts.
- *Non-Participant Observation:* Here, the observer observes in such a position, which is least disturbing to the child being observed and the environment of observation, the specific behavior is observed in natural setting without subjects geting conscious that they are observed by someone. Non-participant observation permits the use of recording instruments.
- *Structure Observation:* Here, the observer prepares a setup/situation in order to observe and analyze the behavior. The observer always keeps in view a frame of reference/targeted behavior for observation, the duration/time of observation and the controlled environment of the observation.
- *Unstructured Observation:* This is also called as uncontrolled or free observation. It is mainly associated with participant observation in which the observer assumes the role of a member of the group to be observed. Here the individual is observed when inside the class, playground or when he is moving about with his friends and class follows without knowing that he is being observed.

Observation is very reliable and objective method to study child and her/his behavior; and can be used with children of all ages and in every school situation like: physical- activities, workshop and classroom situations as well. However, there is great scope for personal prejudices and bias of the observer; and is limited it nature, as it reveals the overt behavior only. It is adaptable both to the individual and the group settings; however, one must observe one individual at a time in order to collect comprehensive data. Having a specific criterion for making observations makes its purpose clear. It is also essential that observations should be made over a period of time and across differing settings to increase its validity, as a single observation may not provide sufficient information about the individual. Moreover, to ensure that the observations are more reliable, one must conduct them under favorable conditions, where there are no undue distractions or disturbances; as it will help us put together an integrated and comprehensive evaluation about the individual.

5.6 Techniques and Tools for Evaluation

Tools and Techniques are required to gather information for evaluation. Interpretation of gathered information may in numerical scores, grades as well as in qualitative terms; for performance on both scholastic and co-scholastic aspects. Interpretations of student's attainment must be measured at three levels:

i. With reference to learner herself/himself and the current status of progress
ii. To identify the status of learner with reference to her/his peer group (percentile rank)
iii. With reference to the criteria, or the expected level of learning for required skills

Before using any tool/technique for evaluation, factors like its relevance, validity, reliability, fairness, objectivity and speed must be considered. Some of these evaluation tools and techniques that are used to collect evidence of the student's performance/mastery, include:

- *Unit Tests and Achievement Tests:* It is a test developed for measuring the level of a skill or knowledge learned in a given concept, usually through planned training/instruction. It can cover a broad range of formal and informal assessments that may be given at various points during or at completion of learning instruction. Through questions and problems; one can find out what children know, think, imagine and feel. Even the ability to make a set of questions for given answers is a valid test of learning. A teacher can in develop various types of questions like Supply-Type questions (Essay, Short-Answer, Very-Short answer, Fill-in-the-blanks); Transformation-Type questions (Pictorial, Interpretive etc), Selection-Type questions (Alternative Response like True/False, Match-the-columns, Multiple-Choice etc).

- *Oral Test:* These are conducted to formally evaluate if a student has the knowledge and understanding of some key concepts of curriculum. In an oral test, the teacher or group of teachers ask students a set of predetermined oral test questions and listen to and evaluate their responses to those questions. Teachers take detailed notes of each student's response, usually using rating sheets that contain the answers to the questions. Communication in an oral-test is highly structured and mostly one-way; students are not given an opportunity to present information unless specifically requested or asked questions about the content, which is not selected for the test. For objectivity, student answers should be either recorded on digital recorder or on paper.

- *Assignments*: These are used for both learning and evaluation. Skills like presentation of observations or information in a systematic way, organization of the important points on a given topic, originality, creativity etc; are evaluated based on specific assignments

designed for such abilities and skills. These may be developed as an extension of classroom lesson, self-evaluation situation, or for detailed study of specific topics; based on the instructional objectives of the curriculum.

- *Quiz*: It is a form of game or mind-sport in which the players (as individual or in team) attempt to answer questions correctly. The results of a well-designed quiz often provide valuable insight into how effectively the course material is being presented. It highlights the subject areas and skill-sets in which the student is particularly strong as well as points out those areas which would benefit them. The quiz may be question-based or it may be pictorial or in form of puzzles etc.

- *Anecdotal Records:* These are used to record specific observation of individual student behaviors, skills and attitudes as they relate to the learning outcomes. Such notes provide cumulative information on student learning and direction for further instruction. They are brief, objective and focused on specific outcomes; and are ideally taken during or immediately after an activity for accuracy of records. These are informal written observational notes in form of a story, that teacher records about what students are learning, their academic performance, learning behavior, their achievements ad social interactions.

- *Projects*: These are undertaken over a period of time and generally involve collection and analysis of data. They are useful in theme-based tasks to be completed as classwork and/or homework as an individual or in groups. They can be open-ended or structured; and should be based on contexts outside the textbook and related to the child's environment /culture /lifestyle /community based social programs.

- *Portfolio*: A collection of student work gathered to demonstrate student performance on specific skills and knowledge, generally linked to state content standards. Portfolio contents are individualized, and may include wide ranging samples of student learning, including but not limited to actual student work, observations recorded by multiple persons on multiple occasions, test results, record reviews, or even video or audio records of student performance. The portfolio contents are scored according to predefined scoring criteria, usually through application of a scoring rubric to the varying samples of student work

- *Performance Assessment*: Direct measures of student skills or knowledge, usually in a one-on-one assessment. These can be highly structured, requiring a teacher or test administrator to give students specific items or tasks similar to pencil/paper traditional tests, or it can be a more flexible item or task that can be adjusted based on student needs. For example, the teacher and the student may work through an assessment that uses manipulatives, and the teacher observes whether the student is able to perform the assigned tasks. Generally, the performance assessments used with students with significant cognitive disabilities are scored on the level of independence the student requires to respond and on the student's ability to generalize the skills, and not simply on accuracy of response. Thus, a scoring rubric is generally used to score responses similar to portfolio or body of evidence scoring.

- *Checklists*: Lists of skills, reviewed by persons familiar with a student who observe or recall whether students are able to perform the skills and to what level. Scores reported are usually the number of skills that the student is able to successfully perform, and

settings and purposes where the skill was observed. It is a tool for identifying the presence or absence of conceptual knowledge, skills or behaviors. It can be used to verify whether the student has followed the key tasks in a procedure, process or activity to be completed. A checklist itemizes task descriptions in one column and provides space beside each column to mark the completion of the task.

- *Inventories*: These are usually used to assess personality of students. It is constructed in the form of a questionnaire, and consists of questions or statements to which the students respond by saying 'yes/no' or 'agree/disagree'. It is important, that the statements of an inventory are put in the first-person language. For example, a teacher may develop an inventory for assessment of interpersonal skills of students by using statements like: 'I shake hands if other person offers', 'I can make arrangements with peers for social activities', 'I know who can help me, if I'm unable to resolve a conflict' etc.

- *Rating Scale*: Rating is a term applied to expression of opinion or judgement regarding some situation, object or character. Opinions are usually expressed on a scale or values. Rating techniques are devices by which such judgements may be quantified. Rating Scale is a method by which we systemize the expression of opinion concerning a trait/object/ event or person. It provides a scale with a set of points which describe varying degrees of dimensions of an attribute being observed.

- *Rubrics*: These use a set of criteria to evaluate a student's performance. They consist of a fixed measurement scale and a detailed description of the characteristics of each level of performance. These descriptions focus on the quality of the product or performance and not the quantity. For example: no number of paragraphs, but examples to support an idea, spelling errors etc. Rubrics give structure to observation; and is a coherent set of criteria for students work that includes description of levels of performance quality on the criteria. It can consist of rating of a performance, which can be generic (eg. very poor to excellent etc) or customized (eg. detrimental to highly effective).

- *Matrix*: It is a relatively easy classroom evaluation technique to use during calss and requires students to distinguish between related or seemingly similar items or concepts. It may be considered as an extension of a double matching-type items, wherein more than two responses are linked to a stimulus. In a matrix, a stimuli is presented vertically (in a row) whereas responses are presented horizontally (in columns). Students are asked to check-mark whether the response in each cell on horizontal column is true for each stimuli. Eg. a matrix can be developed for deficiency of different vitamins and related diseases.

- *Some other techniques*: Apart from the specific tools and techniques detailed above, there are few other techniques for evaluation of students like: diagram-based worksheet, crossword worksheets, , self-assessment and peer-assessment sheets, student reporting papers (feedback forms), conversations, narrative reports,

Choosing the right evaluation tool is crucial for producing useful, credible and rigorous evidence in evaluation. These tools can generally be either direct or indirect measures. Direct measures are those in which the products of student's work are evaluated in the light of learning outcomes of the curriculum. Indirect measures are not based directly on student academic work, but rather on the perception of outside agents like teachers, peers etc. While both direct and indirect measures have their place in holistic evaluation, it is most useful to start with direct measures for evaluation.

5.7 Provisions and Exemptions for Educational Evaluation

In the present educational evaluation system in our country, there are many existing provisions for students with special needs who face difficulty in appearing the exams in traditional format. These provisions are classified according to different disabilities and are notified/revised by the government from time to time. Following are some of the general provisions currently available for children with special needs:

- *Provision of Additional Time*: An additional 20 minutes per hour of examination for each of the subject is provided to compensate for the additional time required for reading by the amanuensis, understanding the question, fatigue while dictating to the amanuensis, sitting continuously etc. If the condition specified in medical certificate requires short break (not more than 10 minutes per hour), it is permitted in addition to the sanctioned additional time.

- *Provision of Amanuensis/Scribe*: The service of amanuensis, reader, lab assistant can be availed as per the requirement of the subject concerned. This facility is available to students having Autism, Cerebral Palsy, Intellectual Disability, Multiple Disability, Blindness, Low Vision, Speech or Hearing Impairment or any other Specific Learning Disabilities etc. The student is allowed to opt for different amanuensis/scribe for different subjects, if necessary.

- *Use of Computers*: Students with minimal hand-function, blindness, low-vision, learning disability, cerebral palsy, autism etc are allowed to use computer along with assistive devices and required software like text-reading etc.

- *Seating Arrangements and other Support:* Wheelchair users and students with mobility impairment are given an option to write the examination on the ground floor in case the examination room is inaccessible. It is also mandatory to make availability of an accessible toilet for students with special needs. Also, there is a provision for ensuring separate well-lit, ventilated and noise or distraction free examination room (single or max 4 seating), if so required.

- *CGPA Calculation:* CGPA in respect candidates with disabilities as defined in the RPWD Act 2016 be calculated out of 5 subjects only, even if offering a NSQF (National Skills Qualification Framework) subject under Compulsory group.

- *Flexibility in Choosing Subjects*: Candidates with special needs have an option of studying one compulsory language as against two. This language should be in consonance with the overall spirit of the Three Language Formula prescribed by the Board. Besides one language any four of the following subjects be offered:

  Mathematics, Science, Social Science, another language, Music, Painting, Home Science, Foundation of Information Technology, Commerce (Elements of Business), Commerce (Elements of Book Keeping and Accountancy), E-Publishing and E-Office (English), E-Publishing and E-Office (Hindi), Information and Communication Technology (ICT-166), any one out of Retail (NSQF) and Information Technology (NSQF). Also, Music, Painting, Home Science are considered as the subjects of study; and Physio-therapy exercises are considered as equivalent to Physical and Health Education course.

- *Alternate Questions/ Separate Question Paper:* In the subjects of English Communicative

and Social Science, Alternative type questions are provided in lieu of questions having visual inputs for candidates with visual impairment. And in subjects of Mathematics and Science, Separate question papers (with enlarged print/ multiple-choice based/ questions without visual inputs etc) are provided.

Many students with special needs may request for question papers in alternative formats (like braille or audio), which can be made available with advance notification. Following are some more specific provisions, in addition to the general provisions mentioned above for learners with special needs:

(a) Students with Visual Impairment
- Exemption from Third Language
- Flexibility in choosing subjects
- Alternate questions in theory papers (Eg. In place of marking/labeling of maps, construction of geometrical figures and diagrams/graphs etc)
- Take examination using Braille typewriter or computer
- Permission to use screen reading software (like JAWS) with prior approval
- Use of equipment like Taylor frame and geometry drawing kit etc

(b) Students with Hearing Impairment:
- Flexibility in choosing subjects, an option of studying one compulsory language as against two; and any four of the other available subjects.
- Permission to allow Interpreter using sign-language in examination room
- The learner may opt for different interpreter for different subjects, if necessary.

(c) Students with Autism, Cerebral Palsy, Intellectual Disability or Multiple Disability:
- Flexibility in choosing subjects
- Use of computers with adapted hardware like trackball instead of mouse, augmentative communication boards (illustrative and not exhaustive)
- Students with Intellectual Disability may opt for project work as an alternative to practical
- Use of adapted chair, table, bed etc in the examination room
- Provision to reading out the questions, wherever necessary
- Permission to use specific assistive technology or adaptive aid/equipment, if relevant.

Any student, may opt for more than one clause mentioned above on the basis of her/his needs. In case, any learner with special need, who is not covered under the above provisions; she/he may approach the concerned regional director atleast 04 (four) weeks prior to the commencement of examination for availing certain accommodations.

In addition to the provisions and arrangements designed to reduce disadvantage and help ensure that the students with special needs get a fair attempt for evaluation; an advisory to schools as per the Guidelines of Inclusive Education of Children with Disabilities (IECD) is issued to all schools of CBSE, where the schools are suggested:

a. to ensure that no child with special needs is denied admission in Mainstream Education
b. to monitor enrolment of disabled children in schools
c. to provide support through assistive devices and the availability of trained teachers
d. to modify the existing physical infrastructure and teaching methodologies to meet the needs of all children including Children with Special Needs
e. to ensure that they are made disability-friendly by 2020 and all educational institutions including hostels, libraries, laboratories and buildings have barrier free access

f. to ensure availability of Study material for the students with special needs like Talking Text Books, Reading Machines and computers with speech software.
g. to ensure adequate number of sign language interpreters, transcription services and a loop induction system for the students with hearing impairment
h. to revisit classroom organization required for the education of Children with Special Needs
i. to ensure regular in-service training of teachers in inclusive education at the elementary and secondary level.

In its broadest and all-encompassing meaning, Inclusive Education, as an approach seeks to address the learning needs of all children. This is possible only in a flexible education system that assimilates the diverse range of needs and adapts itself continuously. And with the amendment of the Rights of Persons with Disabilities Act 2016; we need to relook into the existing provisions and future possibilities for evaluation/examination system for the freshly included disabilities along with the previous ones. We also need to look at potential both at the Board-level (CBSE and State Boards) and School-level examinations (CCE and external evaluations); and also, how we can develop protocols and policies for incorporating the same parameters to International Boards offering education throughout the country.

5.8 Summary

- Continuous and Comprehensive Evaluation (CCE) refers to a system of school-based evaluation that covers overall aspects of student development.
- The term 'continuous' means that evaluation of identified aspects of students 'growth and development' is a continuous process rather than an event, built into the total teaching-learning process and spread over the entire span of academic session.
- The term 'comprehensive' implies that it attempts to cover both the scholastic and the co-scholastic aspects of the student's growth and development.
- The scheme of CCE has inbuilt flexibility for schools to plan their own academic schedules as per specified guidelines; however, still one must consider making requisite adaptations/modifications in the curriculum for fair evaluation of students with special needs in an inclusive classroom.
- There are nine areas of modifications/adaptations that may be considered for the CCE parameters during assessment of students with special needs, based on their abilities and level of functioning; that includes quantity, time, level of support, input, difficulty, output, participation, alternate goals and substitute curriculum.
- Accommodation is the "leveling the playing field" for students by changing 'how' they work through general education curriculum; accommodations that may be considered for CCE may include accommodations in presentation, response, setting and/or timing/ scheduling.
- Alternative assessment is a blanket term that covers any number of alternatives to standardized tests; and are tailored for testing students who are unable to take the regular assessment, even when testing accommodations are provided.
- Various Tools and Techniques are used to gather information for evaluation of performance on both scholastic and co-scholastic aspects; like achievement tests, anecdotal records, rating scales, projects, portfolios, performance assessments, checklists, rubrics etc.
- In the present educational evaluation system in our country, there are many existing provisions for students with special needs who face difficulty in appearing the exams in traditional format. Some are generic in nature and others more specific to different disabilities.

5.9 Experiential Learning

1. Describe the steps required for using observation for the purpose of evaluation.
2. What are the objectives of CCE?
3. Enlist the nine areas of adaptations that may be considered for the CCE parameters during assessment of students with special needs,
4. What is a Portfolio?
5. Enlist the specific provisions/exemptions available in examination system for children with visual impairment.

5.10 Check Your Progress

1. Expand CCE.

2. For accommodation in _____, we change how the student receives information.

3. _____ is an example of accommodation in response.

4. Choosing the right evaluation tool is crucial for producing _____, _____ and _____ evidence in evaluation

5. _____is a method by which we systemize the expression of opinion concerning a trait.

6. Scholastic aspects include _____ areas, whereas co-scholastic aspects include _____.

7. In the context of an evaluation of learning, visual data is the image-based data like_____.

8. _____ is an example of adaptation of the way instruction is delivered to the student.

9. _____ is a coherent set of criteria for students work that includes description of levels of performance quality on the criteria.

10. As per CBSE, under Provision of Additional Time, an additional _____ minutes per hour of examination may be provided to students with special needs.

5.11 Assignments for Self-Evaluation

1. Prepare an observation schedule for assessing student's performance in a group discussion.
2. Prepare a guideline to evaluate written assignments.
3. Prepare an inventory for identifying students' area of interests

5.12 Tutor Marked Assignments

1. Prepare a set of questions for oral-test from any subject of elementary class. Also prepare its scoring rubrics.
2. Propose suggestions for provisions and exemptions for evaluation/examination system for creating a robust inclusive education system.

5.13 References

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PROGRAMME:
Advanced Certificate in Inclusive Education (Cross Disability)

Course Structure

Block	Block Name	Unit	Unit Name
Block 1	Disability and Implications on Learning	Unit 1	Understanding Disability as mandated by RPwDA 2016
		Unit 2	Educational Implications of Disability
		Unit 3	Domain Based Assessment
		Unit 4	Recent developments in legislation and policies: Inclusive Education
		Unit 5	Understanding RPwDA from educational perspectives
Block 2	Pedagogy for Inclusive Education	Unit 1	Learning in an Inclusive school environment
		Unit 2	Teaching Learning Process
		Unit 3	Universal Design for Learning & Inclusive methodologies
		Unit 4	Developing Inclusive Learning Friendly Environment
		Unit 5	Developing Inclusive Learning Resources
Block 3	Curriculum Accommodations and Adaptations	Unit 1	Understanding Curriculum
		Unit 2	Classroom Transactions
		Unit 3	Adaptations in Co-Curricular Activities
		Unit 4	Teaching Practices: Elementary & Secondary Level
		Unit 5	Alternative Methods of Evaluation
Block 4	Communication Needs and ICT	Unit 1	Communication and Behavioural Issues
		Unit 2	Addressing Concerns: Communication and Behaviour
		Unit 3	Modes of Communication
		Unit 4	Communication Strategies & Augmentative and Alternative Communication (AAC)
		Unit 5	Information and Communication Technology
Block 5	Practicum		